

## **BUREAU OF LAND MANAGEMENT**

*The Bureau of Land Management is responsible for the balanced management of the public lands and resources and their values so that they are considered in a combination of multiple use and sustained yield, a combination of uses that takes into account the long-term needs of future generations for renewable and nonrenewable resources. These resources include recreation, range, timber, minerals, watershed, fish and wildlife, wilderness and natural, scenic, scientific, and cultural values.*

**BLM/NM/PL-10-03-1617**



# United States Department of the Interior

## BUREAU OF LAND MANAGEMENT

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[www.blm.gov/nm/st/en.html](http://www.blm.gov/nm/st/en.html)



1617 (A020)

July 28, 2010

Dear Reader:

I am pleased to present the Approved Resource Management Plan (RMP or the plan) for the Socorro Field Office. The signed Record of Decision (ROD) approves the Socorro RMP. The Approved RMP is the Proposed Alternative in the Proposed Socorro RMP with some minor decision modifications. The plan provides guidance for managing approximately 1.5 million surface acres and 6 million acres of Federal mineral estate in Socorro and Catron Counties.

The Approved RMP was prepared under the regulations implementing the Federal Land Policy and Management Act of 1976 and the National Environmental Policy Act of 1969. The RMP contains new decisions and management actions for special designations such as Areas of Critical Environmental Concern, off-highway vehicle (OHV) use and designations, land tenure, visual resource management, minerals and renewable energy development, and avoidance and exclusion areas for rights-of-way. The Approved RMP replaces the 1989 Socorro RMP.

Copies of the ROD and RMP are also on the BLM website at <http://www.blm.gov/nm/st/en.html>. For additional information on the RMP, you may also contact the Socorro Field Office at 575-835-0412.

Now that the RMP is completed, the hard work has only just started. We look forward to your continued assistance and participation as we move forward to implement the decisions in the Approved RMP.

Sincerely,

Danita Burns  
Field Manager

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## LIST OF ACRONYMS AND ABBREVIATIONS

ACEC	Area of Critical Environmental Concern
AML	Appropriate Management Level
AMP	Allotment Management Plan
APHIS-WS	Animal Plant Health Inspection Services-Wildlife Services
ATV	All-Terrain Vehicle
AUM	Animal Unit Month
BLM	Bureau of Land Management
BMP	Best Management Practice
BPS	Budget Planning System
CDNST	Continental Divide National Scenic Trail
CFR	Code of Federal Regulations
COR	Contracting Officer's Representative
CWA	Clean Water Act of 1987, as amended
EA	Environmental Assessment
EIS	Environmental Impact Statement
EO	Executive Order
EPA	Environmental Protection Agency
ERMA	Extensive Recreation Management Area
ESA	Endangered Species Act of 1973, as amended
FIA	Forest Inventory and Analysis
FLPMA	Federal Land Policy and Management Act of 1976
Forest Service	USDA. Forest Service
FRCC	Fire Regime Condition Class
GHG	Greenhouse Gas
GIS	Geographic Information System
GPS	Global Positioning System
HCA	Head of Contracting Activity
HFRA	Healthy Forests Restoration Act
HMA	Herd Management Area
HMP	Habitat Management Plan
IDT	Interdisciplinary Team
IPCC	Intergovernmental Panel on Climate Change
IWIR	Intensive Wilderness Inventory Report
LUP	Land Use Plan
MIS	Management Information System
MSA	Management Situation Analysis
National Register	National Register of Historic Places
NBC	National Business Center
NEPA	National Environmental Policy Act of 1969
NM Standards and Guidelines	New Mexico Standards for Public Land Health and Guidelines for Livestock and Grazing Management
NHPA	National Historic Preservation Act
NMDGF	New Mexico Department of Game and Fish
NMED	New Mexico Environment Department
OHV	Off-Highway Vehicle
PEIS	Programmatic Environmental Impact Statement
PI	Project Inspector
P.L.	Public Law

## LIST OF ACRONYMS AND ABBREVIATIONS

POD	Plan of Development
RMP	Resource Management Plan
RMPA	Resource Management Plan Amendment
ROD	Record of Decision
ROS	Recreation Opportunity Spectrum
ROW	Right-of-Way
SAF	Society of American Foresters
SHPO	State Historic Preservation Office
SMA	Special Management Area
SMZ	Streamside Management Zone
SRMA	Special Recreation Management Area
SSS	Special Status Species
TDS	Total Dissolved Solids
USC	United States Code
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VRM	Visual Resource Management
WO	Washington Office
WSA	Wilderness Study Area
WSMR	White Sands Missile Range
WUI	Wildland-Urban Interface

## CHAPTER 1: INTRODUCTION

### PURPOSE AND NEED FOR THE RESOURCE MANAGEMENT PLAN

This Resource Management Plan (RMP) provides management guidance to the Bureau of Land Management (BLM) Socorro Field Office for public land under the BLM's jurisdiction in Socorro and Catron counties, New Mexico. The RMP provides a comprehensive framework for managing public land and allocating resources in accordance with the principles of multiple use and sustained yield of public lands set forth in the Federal Land Management and Policy Act of 1976 (FLMPA). The decisions in this RMP replace the 1989 Socorro RMP to reflect current conditions and management priorities.

Over the past twenty years, population growth and changing resource demands in the planning area and surrounding environs generated the need for this RMP. For example, recreation such as off-highway vehicle (OHV) use is expected to increase at a greater rate than over the past 20 years, and fire management will become of increasing concern as populations move closer to the rural open space adjoining BLM-managed public land. In addition, the public land managed by the Socorro Field Office has the potential for some renewable energy and minerals development. At the same time and in response to changing circumstances, the BLM is increasing its policy emphasis on control of noxious weeds and invasive species, fire management, and protecting areas with unique values through special designations.

### LOCATION AND SIZE OF THE PLANNING AREA

The public land managed by the BLM Socorro Field Office is located in the west-central portion of New Mexico within Socorro and Catron Counties (see Map 1: Surface Management). Generally, public land is consolidated in the Quemado, Pelona Mountain, Ladron, and Stallion areas. However, in large portions of the two counties, public land is isolated and scattered. The area that this RMP pertains to includes all BLM-managed surface land and federal mineral estate within Socorro and Catron Counties.

Table 1 and Table 2 show the BLM-managed public land, as well as public lands managed by other federal agencies in the two counties. Use of the term "BLM-managed surface estate" refers to the surface acres managed by the BLM, exclusive of acres of Federal mineral estate that underlie land owned or managed by other entities. While the BLM's management decisions apply only to lands under its jurisdiction, the BLM is responsible for collaboratively planning with adjacent jurisdictions and the public to encourage compatible land uses within a regional context.

**Table 1: Surface Management In Socorro And Catron Counties**

Surface Administrator/Owner	Socorro County (acres)	Catron County (acres)	Total (acres)	Percent of Planning Area
Bureau of Land Management	920,410	583,660	1,504,070	17.3
Forest Service	614,660	2,193,982	2,808,642	32.3
National Park Service	373	407	780	0.0
Bureau of Reclamation	14,055	0	14,055	0.2
U.S. Fish and Wildlife Service	284,721	0	284,721	3.3
Department of Defense	442,090	0	442,090	5.1
American Indian Reservations	106,852	13,126	119,978	1.4
State of New Mexico	529,814	515,058	1,044,872	12.0
Private	1,339,830	1,135,282	2,475,112	28.5
<b>Totals</b>	<b>4,252,805</b>	<b>4,441,515</b>	<b>8,694,320</b>	<b>100.0</b>

Derived from BLM 2003. Acreage based on best available GIS data.

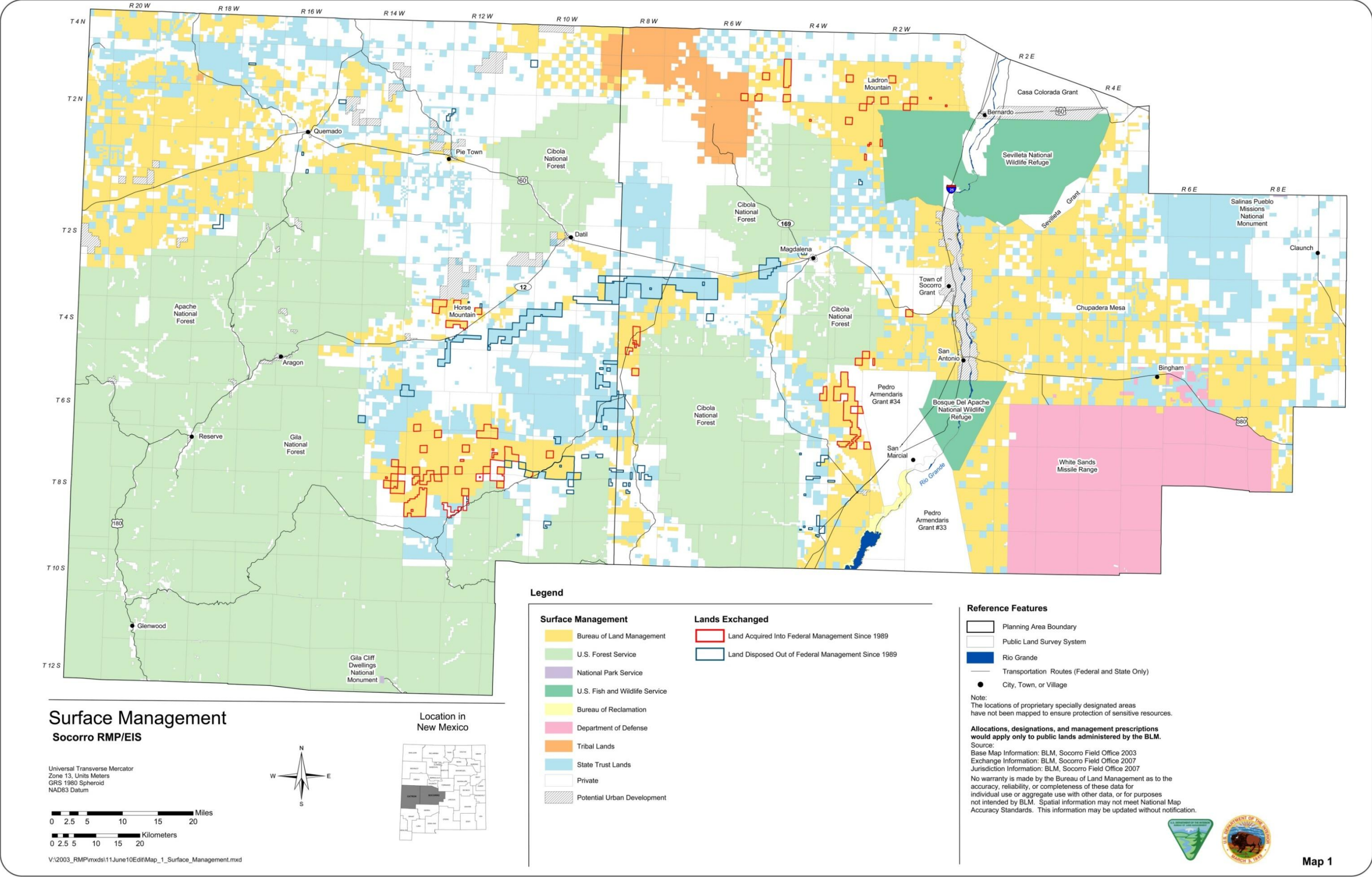
**Table 2 : Federal Mineral Estate Acreages by Surface Management Responsibility in Socorro and Catron Counties**

<b>Administrator/Owner</b>	<b>Socorro County (acres)</b>	<b>Catron County (acres)</b>	<b>Total (acres)</b>	<b>Percent of Federal Mineral Estate</b>
Bureau of Land Management	900,992	540,994	1,441,986	23.7
Forest Service	612,492	2,180,935	2,793,427	45.8
U.S. Fish and Wildlife Service	227,599	0	227,599	3.7
Department of Defense	441,507	0	441,507	7.2
Bureau of Reclamation	1,046	0	1,046	0.0
National Park Service	375	407	782	0.0
American Indian Reservations	48,722	4,187	52,909	0.9
State of New Mexico	51,425	18,222	69,647	1.1
Private	490,557	575,963	1,066,520	17.5
<b>Totals</b>	<b>2,774,715</b>	<b>3,320,708</b>	<b>6,095,423</b>	<b>100.0</b>

Derived from BLM 2003. Acreage based on best available GIS data.



Map 1



## PLANNING PROCESS AND COLLABORATION ON PLAN DEVELOPMENT

This section outlines the steps of the planning process that occurred to prepare this RMP, highlighting collaboration with other jurisdictions and agencies, Tribes, and other stakeholders.

### ***Step 1 – Public Scoping***

Scoping and the RMP process began with the publication of the Notice of Intent in the *Federal Register* to revise the RMP, prepare an Environmental Impact Statement (EIS), and conduct public scoping meetings. The Notice of Intent was published in May 2002. In addition to using other media outlets, three public scoping meetings were conducted by the BLM in August 2002 in Socorro, Quemado, and Zuni, New Mexico. Local, state, and federal government consultation, as well as tribal consultation, was also initiated at the beginning of the planning process. All of the comments and questions received were compiled, reviewed, and analyzed to identify the issues to be addressed in the RMP and EIS.

Based on the nature of comments on OHV use that were received during scoping, the BLM Socorro Field Office later held three focused meetings to solicit further comments from the public on issues and concerns related to OHV use in the Planning Area. Meetings were held during March 2003 and the comments received from the public meetings primarily expressed concerns about OHV use and provided suggestions for future OHV management.

### ***Step 2 – Identification of Issues***

A planning issue is defined as an opportunity, conflict, or problem regarding the use or management of public land and resources. The BLM interdisciplinary team, cooperating agencies, other State and Federal agencies, and the general public raised a number of issues and concerns to be addressed in the RMP. The BLM land use planning process is issue-driven in that it is undertaken to resolve resource management problems and take advantage of management opportunities. The following is a summary of six issues identified by the public and agencies during scoping.

- ***Issue 1*** – Which areas, if any, should be designated for special management, what designations should apply (areas of critical environmental concern [ACEC], special management areas [SMA], or other), and how should these areas be managed?
- ***Issue 2*** – What type of management should be undertaken at the watershed level to reduce erosion, improve surface water quality, maintain and improve vegetation, and reduce nonpoint-source pollution?
- ***Issue 3*** – How should potential energy, fluid, and solid mineral development in the Planning Area be managed?
- ***Issue 4*** – How should travel and transportation—including motorized vehicle use, OHV use, mountain biking, hiking, horseback riding and others—be managed to satisfy public demand while protecting the natural values of the public land?
- ***Issue 5*** – What land use allocations or lands and realty program initiatives need to be addressed in the Plan to accommodate the effective management and support of other resource programs within the Planning Area?
- ***Issue 6*** – How should the BLM best pursue cultural and recreational initiatives to provide the public with quality tourism and cultural heritage tourism opportunities?

Further details of these planning issues are provided in Appendix A, along with issues considered but not further analyzed as part of the planning process.

In developing the RMP, the BLM also considered other program or resource areas, including special status species in coordination with the U.S. Fish and Wildlife Service; appropriate management of woodland areas and noxious weeds; lands and realty issues; and socioeconomic implications for the area.

### ***Step 3 – Development of Planning Criteria***

Planning criteria establish the “side-boards” for decision making, provide focus for data collection efforts, and ensure compliance with legal mandates. (For a list of the Planning Criteria used, refer to Appendix A in this document.)

In addition, a number of federal statutes have been developed over time to establish and define the BLM’s authority to make decisions regarding the management and use of resources on public land. Appendix B includes a brief description of the major legal authorities relevant to BLM land use planning.

### ***Step 4 – Data and Information Collection***

The majority of data and information were extracted from existing data on file at the BLM Socorro Field Office and within the BLM. Other data were obtained from relevant sources to update and/or supplement the BLM’s data, as appropriate for each resource. Data included published and unpublished reports, maps, and digital format (geographic information systems).

### ***Step 5 – Management Situation Analysis***

The purpose of the Management Situation Analysis is to conduct an assessment of the current situation as it relates to the overall management and resource use on BLM-managed public lands within Socorro and Catron Counties. The Management Situation Analysis provides a profile of the resource concerns on public lands within Socorro and Catron Counties, a description of the existing management situation as it pertains to management of the resources, and an analysis of opportunities to modify the existing management situation.

### ***Step 6 –Formulation of Alternatives***

Four alternatives were developed during the planning process, with Alternative B being the BLM’s Preferred Alternative and subsequent Proposed Alternative or Proposed Plan. The alternatives were developed to respond to the RMP’s purpose and need, management concerns, consideration of the affected environment, and issues identified through public scoping.

### ***Step 7 – Release of the Draft RMP/EIS for Public Comment***

A Notice of Availability was published in the *Federal Register* announcing the availability of the Draft RMP/EIS for a 90-day public comment period in April 2007. In the Draft RMP/EIS, the potential effects resulting from each of the alternatives were analyzed. Mitigation measures also were considered in evaluating impacts.

The BLM conducted public hearings on the Draft RMP/EIS in May of the same year. In addition to making the Draft RMP/EIS available to the public, the plan was sent to the cooperating agencies (Zuni Tribe and Catron County) and other governmental agencies as required through consultation. All written and oral comments received during the comment period were reviewed, analyzed, and summarized.

### ***Step 8 – Release of the Proposed RMP/Final EIS***

A Notice of Availability in the Federal Register and the Proposed RMP/Final EIS were released to the public for a 30-day protest period and 60-day Governor’s consistency review in December 2009. Based on public comment on the Draft RMP/EIS, some minor changes were made to the Preferred Alternative, as documented in the Proposed RMP/Final EIS. Chapter 6 of the Proposed RMP/Final EIS describes the

comments received by the BLM on the Draft RMP/EIS, and provides responses to the substantive comments.

### ***Step 9 – Selection of the Approved RMP***

This RMP was approved after resolving the protests and Governor’s consistency review of the Proposed RMP/Final EIS. The BLM issued a Record of Decision selecting Alternative B (Proposed Alternative) as the Approved RMP with some modifications. (For additional information, please refer to the ROD.)

### ***Step 10 – RMP Implementation***

Planning and decision making for the management of BLM-administered land is a tiered, ongoing process. Upon approval of this RMP, subsequent implementation decisions are carried out by developing activity-level or project-specific plans with supporting environmental analysis. Consequently, activity- and project-level plans and additional NEPA analysis are not considered or developed further in this document.

### ***Step 11 – Monitoring and Evaluation***

The BLM will monitor and evaluate actions, resource conditions, and trends to determine if implementation of the RMP is occurring as planned, management goals and objectives are being met, and whether there are unanticipated results from implementation. Monitoring and evaluation are essential components to an adaptive management approach, through which the BLM can detect issues early enough to adjust implementation strategies as necessary to ensure that goals and objectives are achieved. The RMP will be kept current through plan maintenance, amendments, or revisions as demands on resources change or new information is acquired. A plan evaluation will be performed every 5 years as required by the BLM’s Land Use Planning Handbook (H-1610-1).

## **RELATED PLANS**

### ***Relationship to BLM Policies, Plans, and Programs***

This RMP has been prepared to reflect and be consistent with current federal laws, regulations, plans, and guidance, as well as with local government plans and policies to the extent feasible. The decisions in the 1989 Socorro RMP and its subsequent amendments, as well as other more recent BLM plans, were reevaluated to determine if they should be carried forward in this RMP. Since 1989, some of these documents that were considered during the planning process include the:

- *Resource Management Plan Amendment (RMPA) and Environmental Assessment (EA) for the Continental Divide National Scenic Trail*, 1993. This amendment provided for the route selection for the Continental Divide National Scenic Trail between Pie Town and Cuba in Catron, Cibola, McKinley, and Sandoval Counties, New Mexico.
- *The El Camino Real International Heritage Center RMPA/EA, 2001*. This amendment provided for the construction and management of the El Camino Real International Heritage Center. Ownership of approximately 120 acres of public land was transferred to New Mexico for construction and operation of the interpretive center.
- *The El Camino Real Tierra Adentro National Historic Trail Comprehensive Management Plan and Final EIS*, 2004, provides guidance for administering the trail.
- *The New Mexico Standards for Public Land Health and Guidelines for Livestock and Grazing Management (New Mexico Standards and Guidelines)* also amended the 1989 RMP. The standards of land health are expressions of physical and biological condition or functions required for healthy and sustainable ecosystems on public lands, and define the minimum resource conditions that must be achieved.

- *The Fire and Fuels Management Plan Amendment and EA for BLM Lands in New Mexico and Texas, 2004.* This document amended fire management in all New Mexico BLM RMPs and RMPAs.
- *The Programmatic Emergency Stabilization and Rehabilitation Plan and EA, 2005,* provides an integrated program for burned areas in New Mexico.
- *The Final Programmatic Environmental Impact Statement on Wind Energy Development on BLM-Administered Lands in the Western United States, 2005.* The Socorro Planning Area was identified in the EIS as primarily having only a low potential for wind energy development.. (The previous Socorro RMP was not amended by the Wind Energy Programmatic EIS.)

Thirteen Wilderness Study Areas (WSAs) are also located within the Planning Area and are associated with additional management guidance. WSAs are designated by Congress and managed in accordance with the *Interim Management Policy and Guidelines for Land Under Wilderness Review* (BLM 1995), which allows some recreation and other uses and requires protection of wilderness values. If formally added to the Wilderness Preservation System, these areas will be managed in accordance with BLM regulations for wilderness management in 43 CFR 6300. If a WSA is released by Congress from consideration for wilderness designation, the area will be managed in accordance with this RMP.

### **Cooperating Agencies**

Jurisdictions in the area with land use plans include Socorro County (1998) and Catron County (1992). Catron County served as a cooperating agency during preparation of the RMP and EIS.

Throughout the planning process, the BLM worked closely with the Pueblo of Zuni. The Zuni Pueblo also accepted an invitation to participate as a cooperating agency, and similar to Catron County, a Memorandum of Understanding established the role of the Zuni's participation in the process. In accordance with the RMP, the BLM and the Zuni Pueblo will initiate an updated Memorandum of Understanding to outline the procedures for consultation related to future actions that might affect the Zuni Salt Lake, a site of religious and historical importance to the Zuni.

## **VISION AND GOALS OF THE RESOURCE MANAGEMENT PLAN**

The RMP is intended to guide future management actions based on the vision and resource goals for managing the public land in the Socorro Field Office. The vision for this RMP is provided by the BLM's mission, strategic plan, the BLM State Director's priorities, and goals identified specifically in this RMP.

### **BLM Strategic Plan**

The mission of the BLM is to sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations. In order to accomplish that mission, the BLM develops strategic plans containing a comprehensive set of broad goal statements and a subset of mission goals. These plans are publicly available on the BLM web site. The BLM Strategic Plan 2000-2005 provided guidance during the planning process. This plan includes the following two goal statements with their supporting subset of mission goals:

- **Goal 1: Serve Current and Future Publics**
  - Provide opportunities for environmentally responsible recreation
  - Provide opportunities for environmentally responsible commercial activities
  - Preserve natural and cultural heritage resources
  - Reduce threats to public health, safety, and property
  - Provide land, resource, and title information



- Provide economic and technical assistance
- **Goal 2: Restore and Maintain the Health of the Land**
  - Understand and plan for the condition and use of the public lands
  - Restore at-risk resources and maintain functioning systems

### ***State Director Priorities***

The State Director has identified several priorities for the management of BLM-administered lands in New Mexico to be accomplished:

- Restore watershed health
- Protect special landscapes
- Reclaim “legacy” lands (lands that have been damaged by historic use or extraction of public resources)
- Help communities meet future needs
- Enhance habitat for special status species
- Consolidate land ownership patterns
- Resolve mineral conflicts

### ***RMP Goals***

Based on the BLM’s Strategic Plan, the State Director’s priorities, and the issues identified in the Socorro Planning Area, the goals for this RMP include the following:

- Manage for long-term sustainability and, where necessary, restore the health of the woodland, rangeland, and riparian landscapes in the Planning Area;
- Manage sensitive species and communities to ensure long-term viability, and promote delisting of threatened or endangered species;
- Within the capability of the Planning Area’s natural and cultural resources, provide tourism, recreational, educational, and research opportunities;
- Within the capability of the Planning Area resources, provide a predictable, sustained flow of economic benefits to individuals and local communities; and
- Work with local American Indian Tribes and local communities to meet their needs within the mission of the BLM.

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## CHAPTER 2: MANAGEMENT DECISIONS AND LEGAL MANDATES

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This RMP is composed of land use plan-level decisions as defined in the BLM's *Land Use Planning Handbook* H-1601-1 (dated March 2005). Future proposals for site-specific actions may require more detailed environmental review in compliance with the NEPA.

This chapter provides detailed information for the management of each resource, resource use, or program. The section for each resource, resource use, or program addresses both (1) continuing management guidance, or the applicable laws, regulations, and policy guidance with which the BLM must comply; and (2) discretionary management decisions.

### AIR QUALITY AND CLIMATE CHANGE

All BLM actions and use authorizations that may affect air quality must comply with applicable local, State, Tribal, and Federal air quality laws, statutes, regulations, standards, and implementation plans. The State of New Mexico air quality regulations are provided in the *New Mexico Administrative Code*, Title 20, Chapter 2. These regulations establish *New Mexico Ambient Air Quality Standards* that are equal to or more stringent than the *National Ambient Air Quality Standards*. In addition to the criteria pollutants covered by the National Standards, New Mexico has promulgated ambient air quality standards for total suspended particulates and hydrogen sulfide, and added a 24-hour nitrogen dioxide standard. New Mexico also requires that all pollutant concentrations be expressed in parts per million and adjusted for altitude and temperature at the measurement location. The New Mexico Environment Department (NMED) also regulates smoke management through requirements for the use of prescribed fires (Title 20, Chapter 2, Part 65 of the New Mexico Administrative Code).

Air quality issues in the Planning Area are generally related to fire management. Best Management Practices related to air quality are prescribed in the *2004 Fire and Fuels Management Plan Amendment and Environmental Assessment for Public Lands in New Mexico and Texas* (also referred to as the Statewide Fire and Fuels Management Plan Amendment) and BLM Manual 7000, and are common to all alternatives (Appendix C: Best Management Practices). In addition prescribed burning must comply with the requirements of the state Smoke Management Program.

The Socorro Field Office will follow climate change guidance as it is issued. Climate is the composite of generally prevailing weather conditions of a particular region throughout the year, averaged over a series of years. Greenhouse gases (GHGs) have the potential to impact climate and in turn, climate has the potential to influence resource management. GHGs include carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), water vapor, and several trace gases.

Ongoing scientific research has identified the potential impacts of GHG emissions on global climate. Through complex interactions on a regional and global scale, GHG emissions cause a net warming effect on the atmosphere, primarily because greenhouse gases absorb heat energy that would otherwise be radiated by the earth back into space. Although GHG levels and corresponding variations in climatic conditions have varied for millennia, industrialization and the burning of fossil carbon sources have caused GHG concentrations to increase measurably, and may contribute to overall climatic changes, typically referred to as climate change. Increasing CO<sub>2</sub> concentrations also lead to fertilization and growth of specific plant species.

A 2007 U.S. Government Accountability Office (GAO) report on climate change found that “federal land and water resources are vulnerable to a wide range of effects from climate change, some of which are

already occurring. It is not possible at this time to predict with any certainty the local or regional effects of this RMP's proposed actions on climate.

## CAVE AND KARST RESOURCES

Management Goal	
Protect, preserve, study, and identify karst features and significant caves, and ensure that they are available for appropriate uses by present and future generations.	
Resource and Planning Issues	Supporting Management Decisions
Significant Caves and Karst Features ( <i>Issues 1 and 5</i> ) <sup>1</sup>	<ul style="list-style-type: none"> <li>Develop a plan to manage caves and karst within 2 years of the Record of Decision for this RMP.</li> </ul>

The BLM manages caves and karst on public land according to the Federal Cave Resource Protection Act of 1988 (Title 16, United States Code, Sections 4301-4309 [16 U.S.C. 4301-4309]). The law is intended to: (1) secure, protect, and preserve significant caves on Federal land, and (2) to foster collaboration and exchange of information between government authorities and those who use caves on Federal land for scientific, educational, or recreational purposes. The statute directs that significant caves be identified on public land, and that use of those significant caves be regulated as appropriate. The criteria for identifying significant caves are found in 43 CFR 37.11 (C). The BLM has the authority to administratively designate significant caves based on those criteria and develop management plans for their protection. The Onshore Oil and Gas Order No. 1 also provides authority for protection of cave resources.

Eighteen significant caves have been identified consistent with the Federal Cave Resource Protection Act. Cave and karst resources will be delineated and mapped and a management plan will be prepared within two years of the Record of Decision on this RMP.

Imminent threats from natural or human-caused deterioration, or potential conflict with other resource uses will be reduced by identifying priority geographic areas for new field inventory, based on a probability for unrecorded significant resources. In addition, some areas are associated with stipulations on fluid minerals leasing for the purpose of protecting caves and karst regions (see section below).

## CULTURAL RESOURCES

Management Goal	
Preserve, protect, study, and interpret significant cultural resources and ensure that they are available for appropriate uses by present and future generations. Imminent threats from natural or human-caused deterioration, or potential conflict with other resource uses, are reduced by identifying priority geographic areas for new field inventory, based on a probability for unrecorded significant resources and known or suspected risk factors.	
Resource and Planning Issues	Supporting Management Decisions
Land Acquisition ( <i>Issues 5 And 6</i> )	<ul style="list-style-type: none"> <li>Acquire non-Federal cultural resource areas based on identified criteria: <ul style="list-style-type: none"> <li>Site significance</li> <li>Site management feasibility</li> <li>Partnership potential</li> <li>Community/public support</li> <li>Heritage tourism potential</li> </ul> </li> </ul>

<sup>1</sup> Planning issues are described in the Chapter 1: Introduction on pages 4 and 5, and in Appendix A: Planning criteria.



Heritage Tourism (Issue 6)	<ul style="list-style-type: none"> <li>Promote heritage tourism at sites or areas that meet the following criteria: <ul style="list-style-type: none"> <li>Low resource vulnerability to effects from Heritage Tourism</li> <li>Potential for site protection through physical “site hardening” measures, administrative measures or other means of mitigation</li> <li>Community/public support and interest</li> <li>Partnership opportunities</li> </ul> </li> </ul>
Cultural Resources Protection	<ul style="list-style-type: none"> <li>Designate four ACECs (Cerro Pomo, Ladron Mountain-Devil’s Backbone, Mockingbird Gap, and Zuni Salt Lake) and identify four SMAs (Fort Craig, Newton Site, Playa Pueblos, and Teypama/Penjeacu) to protect and manage cultural resources.</li> </ul>

### **Ongoing Regulatory Compliance Activities**

The BLM complies with numerous Federal laws, regulations, Executive Orders, and other directives regarding cultural resources and historic preservation (see Appendix B). The requirement to appropriately manage cultural resources was incorporated into FLPMA, and this law remains the primary basis for the BLM’s program for managing cultural resources in conjunction within the agency’s mandate to promote multiple, sustainable uses of resources on public land.

Section 106 of the National Historic Preservation Act stipulates that Federal agencies give due consideration to historic properties (e.g., resources eligible for the National Register of Historic Places [National Register]) as Federal undertakings (i.e., Federal projects or federally funded or licensed projects) are planned and implemented. Regulations for Protection of Historic Properties [36 CFR 800] define a process for consulting with State Historic Preservation Officers, the Federal Advisory Council on Historic Preservation, and other interested organizations and individuals. In 1997, the BLM negotiated a National Programmatic Agreement with the Advisory Council on Historic Preservation and the National Conference of State Historic Preservation Officers regarding the manner in which the BLM will comply with the National Historic Preservation Act. This nationwide agreement replaced a similar, earlier, State-level agreement that was in place when the 1989 RMP was prepared. The National Programmatic Agreement is implemented through a state-specific protocol negotiated with the State Historic Preservation Officer.

In December 2006, the BLM issued Instruction Memorandum No. 2007-030, which provides clarification of cultural resource considerations for OHV designation and travel management. This Instruction Memorandum recognizes that inventory requirements, priorities, and strategies will vary depending on the effect and nature of the proposed OHV activity and the expected density and nature of historic properties (based on existing inventory information) and will be followed under this RMP to ensure Section 106 compliance.

Because the vast majority of the cultural resources on land managed by the Socorro Field Office are archaeological sites, the Archaeological Resources Protection Act is an important basis for the Socorro Field Office cultural resource program. This Act and implementing regulations (43 CFR 7) gives the BLM authority to permit uses of archaeological resources on public land and specifies that such permits can only be issued for scholarly research or resource preservation. Human remains, funerary objects, sacred objects, and objects of cultural patrimony affiliated with American Indians are sometimes associated with archaeological sites. The Native American Graves Protection and Repatriation Act stipulates how such remains and objects on Federal land are to be treated.

The BLM applies a “rule of reason” in considering how potential effects of BLM actions on cultural resources will be considered on non-Federal land, as directed by BLM Manual 8100.07 and the National Programmatic Agreement. Under this policy, the BLM inventories, evaluates, and assesses potential effects on cultural resources on nonpublic land to the extent that effects stem from BLM decisions. These

situations may arise for linear projects that cross land of various jurisdictions, including public land, or issuance of permits to drill on split-estate land. Cross-jurisdictional activities also may be subject to the New Mexico Cultural Properties Act, which addresses cultural resources on State land.

Cultural resource surveys will continue to be conducted prior to authorization of any ground-disturbing activity or land disposal, with the possible exception of land disposed of to the State of New Mexico under an existing memorandum of understanding. This will be done in accordance with the National Programmatic Agreement and New Mexico protocol. In accordance with the protocol, the BLM approves and proceeds with projects that do not affect properties listed on or identified as eligible for the National Register without consulting with the New Mexico State Historic Preservation Office (SHPO). The BLM submits documentation of such projects to the SHPO quarterly and also submits an annual report of the program.

Affiliated American Indian Tribes will be consulted for all actions that may affect their interests.

The BLM will continue to fund and conduct proactive cultural resource inventories in compliance with Section 110 of the National Historic Preservation Act and in accordance with cultural resource goals and evolving management priorities. Inventories will be conducted in the following areas, as funding is available:

- **High Priority** – Rural/urban interface areas and other areas identified as at-risk from vandalism or development, areas where highly significant or vulnerable resources are suspected, survey necessary for understanding or identifying cultural landscapes, and other areas as identified based on evolving management priorities.
- **Medium Priority** – Assess potential value of unreported late-1970s Class II survey data and analyze, if warranted, areas in the vicinity of large prehistoric villages where other sites are likely to be concentrated; management areas designated by other resource programs with potential conflicts with cultural resource program goals; or other areas as identified based on evolving management priorities.
- **Low Priority** – Management areas designated by other resource programs with little potential for conflict with cultural resource program goals, and other areas as identified based on evolving management priorities.

### ***Land Acquisition and Heritage Tourism***

The cultural resources program in Socorro will emphasize a balance between site protection and site use, for public enjoyment and economic benefit to communities. If appropriate, at least one new site shall be developed for public visitation over the life of the plan, and some programs and products will be developed for sites already designated for public use, such as Fort Craig and Penjeacu.

Land acquisition may be pursued in support of cultural resource management goals as opportunities arise. These opportunities will be evaluated according to the following criteria:

- Site significance
- Site management feasibility
- Partnership potential for site management
- Community/public support for acquisition
- Heritage tourism potential

The Socorro Field Office will promote heritage tourism sites and projects to raise public awareness and appreciation for cultural resource values, provide for public enjoyment of cultural resources on public

land, and support rural economies. Potential heritage tourism sites and/or projects will be evaluated according to the following criteria:

- Degree of resource vulnerability to effects from heritage tourism
- Potential for site protection through physical “site hardening” measures, administrative measures, or other means of mitigation
- Community/public support and interest
- Partnership opportunities for site management

Existing sites that are or could be managed for heritage tourism values and benefits include Magdalena Stock Driveway, Fort Craig, El Camino Real de Tierra Adentro National Historic Trail, and Penjeacu. Other sites may be identified over the life of this RMP.

The BLM will partner with the State of New Mexico on regional tourism opportunities, including Boots and Saddles, Magdalena Trail Project, and activities associated with El Camino Real International Heritage Center. In addition, the BLM will cooperate with the National Park Service, other agencies, Mexico, interested groups, and landowners in protecting and interpreting El Camino Real de Tierra Adentro National Historic Trail in accordance with a comprehensive management plan (National Park Service and BLM 2004).

### ***Areas of Critical Environmental Concern and Special Management Areas***

Several areas have sensitive or unique cultural resources will be managed under special designations. Generally, management will protect resources in these areas by reducing access and restricting surface-disturbing activities. The following Areas of Critical Environmental Concern (ACECs) and Special Management Areas (SMAs) are specifically related to cultural resources management and protection:

- Mockingbird Gap Proprietary ACEC (8,685 acres)
- Zuni Salt Lake Proprietary ACEC (46,746 acres) – incorporates most of the former Fence Lake SMA
- Fort Craig SMA (149 acres)
- Newton Site Proprietary SMA (6,789 acres)
- Penjeacu SMA (11 acres) – formerly Teypama
- Playa Pueblos Proprietary SMA (203 acres)

ACECs and SMAs (that are not proprietary) are shown on Map 4, and further information on the management of specially designated areas is provided in Chapter 3: Special Designations.

The BLM also identified an SMA to support the Continental Divide National Scenic Trail (see Recreation section below). Cultural site protection will be considered in planning the location of this trail. Some fluid mineral leasing stipulations (see Minerals section below) were developed in part for protection of cultural resources and will be applied as appropriate.

## **FORESTRY AND WOODLAND MANAGEMENT**

Management Goal
Maintain sustainable uses and improve woodland and forest health by implementing Best Management Practices. Employ silvicultural practices that will reduce encroachment of woodland species, encourage natural regeneration, and increase individual tree vigor.

Resource and Planning Issues	Supporting Management Decisions
Woodland Management (Issues 2 and 5)	<ul style="list-style-type: none"> <li>▪ Manage piñon-juniper, ponderosa, savannah, and mixed conifer cover types to improve ecological condition, provide for needs of local communities, and improve wildlife habitat.</li> </ul>
Commercial Wood Cutting and Personal Fuel-Wood Cutting (Issues 2 and 5)	<ul style="list-style-type: none"> <li>▪ Permit commercial woodcutting in areas that meet following criteria:               <ul style="list-style-type: none"> <li>○ Accessibility – There must be a road into the general area of the site, though not necessarily to the site itself; access may require building temporary roads that can be removed or rehabilitated when the project is completed.</li> <li>○ Site has been identified for treatment (using New Mexico Standards and Guidelines and Standard Forest Inventory)</li> <li>○ Stable soils (resilient to disturbance)</li> <li>○ Slopes of less than 40 percent</li> <li>○ Excepted areas – areas identified for no woodcutting</li> </ul> </li> <li>▪ Permit personal-use woodcutting in areas according to the same criteria, except that there must be a road into the site. Silvicultural practices in WSAs will conform to the Interim Management Policy (see Section 2.3.15).</li> </ul>
Plant Or Plant Materials Sales Areas (Issues 2 and 5)	<ul style="list-style-type: none"> <li>▪ Permit personal-use plant or plant materials sales if public demand warrants, in areas that meet identified criteria:               <ul style="list-style-type: none"> <li>○ Accessibility</li> <li>○ Availability of plant species</li> <li>○ Type of removal work</li> <li>○ Potential of other use areas – the BLM may consider public salvage of native plant species from a proposed project area (gravel pit, etc.) depending on public demand, location of the particular project (accessibility), and staffing levels.</li> <li>○ Excepted areas – areas identified for no plant collecting.</li> </ul> </li> </ul>

The Mineral Material Disposal Act of 1947, as amended, establishes the authority under which the BLM disposes of timber and other forest products. The Mineral Material Disposal Act and FLPMA direct that Ponderosa Pine stands be managed on a multiple-use, sustained-yield basis (see Appendix B: Acts of Authority and Mandates for the BLM). In addition, the Departmental Manual Part 586, Timber Management, Section 1.3, policy states:

“Forest lands are to be managed to yield the highest combination of products and benefits consistent with the purposes specified by Congress. All Forest management activities are directed in accordance with sound silvicultural practices, multiple uses, and environmental enhancement. The protection of streams, wildlife, and other forest values are taken into account in developing a forest management plan.”

Section 1.3 (C) 2, Forest Regeneration, further defines timber management:

“non-stocked forest lands resulting from harvesting or fire will be promptly regenerated. The method of regeneration may be natural or artificial seeding or planting. The tree species used for reforestation purposes should be suitable to the site and climatic conditions so as to produce optimum growth and yield.”

Under Section 1.3 C (3), “Every reasonable effort will be made to protect forest values from destruction by fire, insects, diseases, and other destructive agents....” Other forest program information can be found in the Code of Federal Regulations at 43 CFR 5000.

Silvicultural practices in WSAs shall conform with the 1995 Interim Management Policy. In accordance with this guidance, pruning, site preparation, and reforestation will be permitted only in cases that satisfy

the non-impairment criteria as identified in H-8550-1. Reforestation using native species may be done following fire or other natural disaster if natural seeding is not adequate. In 2001, the U.S. Congress funded the National Fire Plan to reduce hazardous fuel and restore forests and rangeland. In response, the Secretaries of Agriculture and the Interior, along with western Governors and other interested parties, developed a 10-year strategy and implementation plan for protecting communities and the environment. National plans, together with the Federal Wildland Fire Management Policy (2001), form a framework for Federal agencies, States, Tribes, local governments, and communities to reduce the threat of fire, improve the condition of the land, restore forest and rangeland health, and reduce risk to communities. Both the forestry and fire programs operate under the 2004 Statewide Fire and Fuels Management Plan Amendment.

Several tools to attain management goals have been developed in two pieces of legislation passed since 2002. The Healthy Forest Initiative of 2002 expands stewardship contracting authority with communities, the private sector, and others to allow the BLM and the Forest Service to enter into long-term contracts to meet land management objectives, including reducing wildland fire risk and improving forest and woodland health (Appendix G: BLM Stewardship Contracting Guidance). Among other things, the new stewardship contracting authority allows forest products to be exchanged for ecological restoration services, which may include thinning and removing brush and trees. The 2003 Healthy Forests Restoration Act contains a variety of provisions to expedite hazardous-fuel reduction and forest-restoration projects on specific types of Federal land that are at risk of wildland fire or insect and disease epidemics.

Partnerships and working relationships with local communities will continue and increase, along with partnerships with State and Federal entities to accomplish woodland and forest health management. Stewardship and service contracts will be used whenever feasible, thereby encouraging local small business opportunities.

The forestry management program will maintain sustainable uses and improve woodland and forest health in the Socorro Field Office by implementing Best Management Practices (see Appendix C: Best Management Practices), through application of the New Mexico Standards and Guidelines and Fire Regime Condition Class (FRCC). FRCC is an interagency, standardized tool for determining the degree of departure from reference condition vegetation, fuels, and disturbance regimes. Assessing FRCC can help guide management objectives and set priorities for treatments. The forestry program will work with the fire management program to manage the use of fire in the woodland and forest ecosystems to achieve the following resource goals:

- Ensure forests and woodlands are healthy, functioning ecosystems that provide habitat for the wildlife species within New Mexico.
- Manage forests and woodlands within a historic range of density and structure to achieve healthy and productive watersheds.
- Return woodland stands to a condition where ecological processes, such as fire and insects, can exist without uncharacteristic effects.
- Provide local communities with special forest products and business opportunities, while protecting cultural and other natural resources.
- Use management tools to implement the Healthy Forest Restoration Act of 2003, the National Fire Plan, and the President's Healthy Forests Initiative and the BLM's New Mexico Fire and Fuels Management Plan.
- Contribute to the Nation's energy supply consistent with the National Energy Policy.

The forestry program for the Socorro Field Office will be driven primarily by ecological objectives while promoting economic and social benefits. The goal is to restore pre-suppression forest and woodlands structure, composition, and processes on lands managed by the New Mexico BLM to maximize the resilience of the ecosystem.

Piñon-juniper, ponderosa, and mixed conifer cover types will be managed to improve ecological condition, provide the needs of local communities, and improve wildlife habitat. These cover types include potential old-growth stands (Appendix N: Old Growth Forest Definitions). High-tree-density woodland sites will be managed to reduce woody species and allow for increases in herbaceous understory. Savannah grassland sites will be treated to remove encroaching woody species, to restore them to the historical grassland reference condition based on potential from ecological site description. Dominance of Ponderosa Pine will be reestablished in the sites that will support it. Retention of larger, fire tolerant trees will be a management goal, along with uneven management. Woodland and forest sites will be evaluated for meeting standards for forest health and those identified as not meeting the standard will be managed in accordance with Best Management Practices to become properly functioning (see Appendix C: Best Management Practices). Assessment also will utilize the Fire Regime Condition Class (FRCC). Treatment techniques may include wildland fire use, prescribed fire, mechanical treatment, chemical treatment, or biological treatment to achieve management goals for woodland and forest health.

### ***Vegetative Sales and Woodcutting***

The Socorro Field Office vegetative sales program will strive to provide commercial opportunities for local industry with commercial fuelwood areas and other potential wood products, accessible public fuelwood areas, Christmas tree collection sites, and plant adoption sites. The vegetative material sales program will provide opportunities for vegetative sales to meet local and regional needs in a manner that minimizes impacts on resources. Vegetative materials may include fence posts, Christmas trees, piñon nuts, seeds, and seedlings (native perennial species such as yuccas, cactus species, etc.). A portion of wood harvested annually on BLM-administered public land could be used for biomass consumption for alternative energy development depending on demand and ecological site limitations.

The Pie Town Fuelwood Area will be managed as a designated fuelwood cutting area as appropriate to conform with sustainable harvesting guidelines. The Socorro Field Office will exclude or restrict woodcutting and plant materials sales in special designations as identified below, in the section Special Designations.

Areas will be designated for commercial and personal woodcutting based on the following criteria:

- Accessibility – For personal woodcutting, there must be a road into the site. For commercial woodcutting, there must be a road into the general area of the site, though not necessarily to the site itself; access may require building temporary roads that can be removed or rehabilitated when the project is completed.
- Site has been identified for treatment (using New Mexico Standards and Guidelines and Standard Forest Inventory).
- Stable soils (resilient to disturbance).
- Slopes of less than 40 percent (except where technology, economics, and environmental concerns are mitigated to achieve resource management goals).
- No woodcutting in excepted areas – areas identified for no woodcutting for the protection of other resources.

If public demand warrants, areas will be designated for personal-use plant or plant materials sales based on the following criteria:

- Accessibility.
- Availability of plant species.
- Type of removal work.
- Potential of other use areas – the BLM may consider public salvage of native plant species from a proposed project area (gravel pit, etc.) depending on public demand, location of the particular project (accessibility), and staffing levels.
- No sales in excepted areas – areas identified for no plant collecting for the protection of other resources.

## HAZARDOUS MATERIALS AND PUBLIC SAFETY

The BLM Manual Section 1703, Hazardous Materials Management, provides a framework for hazardous materials management by describing the BLM’s objectives, defining policy and responsibilities, and citing authority for management of hazardous materials.

All decisions comply with Federal and State hazardous materials management laws and regulations (see Appendix B: Acts of Authority and Mandates for the BLM). Management priorities would include maintenance of the health of ecosystems through assessment, cleanup, and restoration of contaminated sites; management of hazardous materials related risks, costs, and liabilities; and integration of environmental protection and compliance with all environmental statutes into all BLM activities.

Adjacent to the north and west sides of the White Sands Missile Range in Socorro County, the U.S. Department of Defense has delineated and designated four areas as safety evacuation areas; e.g., areas evacuated of residents and nonresidents prior to and during missile firing on the White Sands Missile Range. These areas are a mix of public, State, and private lands.

Personnel of the White Sands Missile Range follow a number of stipulations to communicate with and protect residents within the safety evacuation areas. All persons within these safety evacuation areas will be evacuated for 12 hours during a missile firing. Currently, the notification process for residents and the BLM’s Socorro Field Office requires 30-days’ notice in advance of the firing followed by a 10-day notice, both delivered by mail. These notices are followed by a hand-delivered notice 3 days in advance of the firing to those living in the safety evacuation area and to the BLM’s Socorro Field Office. During the 12-hour evacuation period, all primary roads into the areas are blocked and no one, including BLM personnel, recreational users, OHV users and other publics, is allowed to enter the areas until the missile firing procedures have been completed.

While impacts off the Range are not intentional, these areas were imposed as safety buffers. Procedures to handle such occurrences (e.g., impacts from projectiles or debris) have been established by the U.S. Department of Defense.

## LANDS AND REALTY

Management Goal
Respond to public requests for land use authorization, sales, and exchanges; support the multiple-use management goals and objectives of other resource programs as they relate to land and realty actions; and acquire access to provide continuing administrative and public needs and to facilitate the acquisition and disposal of public land, or interests in public land, in order to promote enhanced management and multiple uses of resources.

Resource and Planning Issues	Supporting Management Decisions
Right-of-way Avoidance and Exclusion Areas (Issues 4 And 5)	<ul style="list-style-type: none"> <li>Manage 406,289 acres as right-of-way exclusion areas, and 342,363 acres as right-of-way avoidance areas.</li> </ul>
Utility Corridors (Issue 5)	<ul style="list-style-type: none"> <li>Designate one north-south utility corridor. The width of the corridor is be 1 mile on each side of centerline of the corridor.</li> </ul>
Land Tenure (Issue 5)	<ul style="list-style-type: none"> <li>Retain approximately 1,415,913 acres in Federal ownership. Approximately 85,591 acres have been identified as suitable for disposal in accordance with the Land and Mineral Disposal Policy (Appendix F).</li> </ul>
Acquisition (Issues 4 And 5)	<ul style="list-style-type: none"> <li>Acquire non-Federal land from willing sellers within WSAs, ACECs, special management areas, cultural resource sites, or other areas that are identified based on resource and program objectives.</li> <li>Acquire legal access as needed throughout the planning area based on resource objectives as acquisition opportunities arise to support all resource programs.</li> </ul>

Land generally will remain in Federal ownership unless it meets specific criteria for disposal in FLPMA and existing land use plans. The primary mission of the lands and realty program in regard to land tenure is to conserve Federal ownership and consolidate administrative boundaries to create a more efficient and economical land ownership pattern. The acquisition of land that will enhance and protect important resources is an established priority for the Socorro Field Office. Land will be acquired only from owners willing to dispose of them. In addition, land exchanges between the BLM and the State of New Mexico will occur when the exchange improves the management potential of State and Federal land.

Land identified for disposal prior to July 2000 may be sold in accordance with the Federal Land Transaction Facilitation Act. This Act allows the BLM to retain the receipts from land sales that will be used to cover administrative costs and to acquire properties that will improve the nation's land management pattern. Land identified for disposal in the 1989 RMP will be subject to the Act.

All existing valid rights including leases, permits, easements, and withdrawals are recognized and will be carried forward under this RMP.

### **Land Tenure**

All land and mineral disposal actions will conform to the criteria established in the Land and Mineral Disposal Policy (Appendix F: Land/Minerals Disposal Policy and ROW Exclusion/Avoidance Area Plan). Proposed realty actions are subject to additional NEPA analysis, which considers a number of resources and uses when considering the merits of any disposal or acquisition. Acquisition of nonpublic land to support wildlife and other programs will occur as needed, such as land adjacent to HMP areas, ACECs, SMAs, or other areas of concern.

Approximately 85,591 acres of isolated parcels are identified as suitable for disposal pending environmental analysis, in accordance with the Land and Mineral Disposal Policy in Appendix F (see Map 2). Approximately 1,413,913 acres are designated as areas to be retained in Federal ownership (see Map 2). Nonpublic land will be acquired from willing sellers to the extent possible within WSAs, ACECs, SMAs, cultural resource sites, or other areas, as identified, to achieve resource objectives.



## ***Rights-of-Way***

Under the authority of FLPMA and the Mineral Leasing Act of 1920 (see Appendix B: Acts of Authority and Mandates for the BLM), the Socorro Field Office will continue to grant right-of-way leases and permits to qualified individuals, businesses, and government entities for use of public land. Right-of-way grants will include authorizations for access, utilities and telephone lines, fiber-optic lines, and other communication sites. All right-of-way applications will continue to receive environmental review on a case-by-case basis and will be coordinated, to the fullest extent possible, with all potentially affected interest groups and agencies.

The Record of Decision for the *Westwide Energy Corridor Programmatic Environmental Impact Statement* (PEIS) designates energy corridors on Federal lands in 11 western states in accordance with the Energy Policy Act of 2005. The proposed corridors will facilitate the future siting of energy related pipelines and electrical transmission and distribution, while minimizing dispersed impacts to the environment. The Socorro RMP has incorporated the applicable decisions from this PEIS.

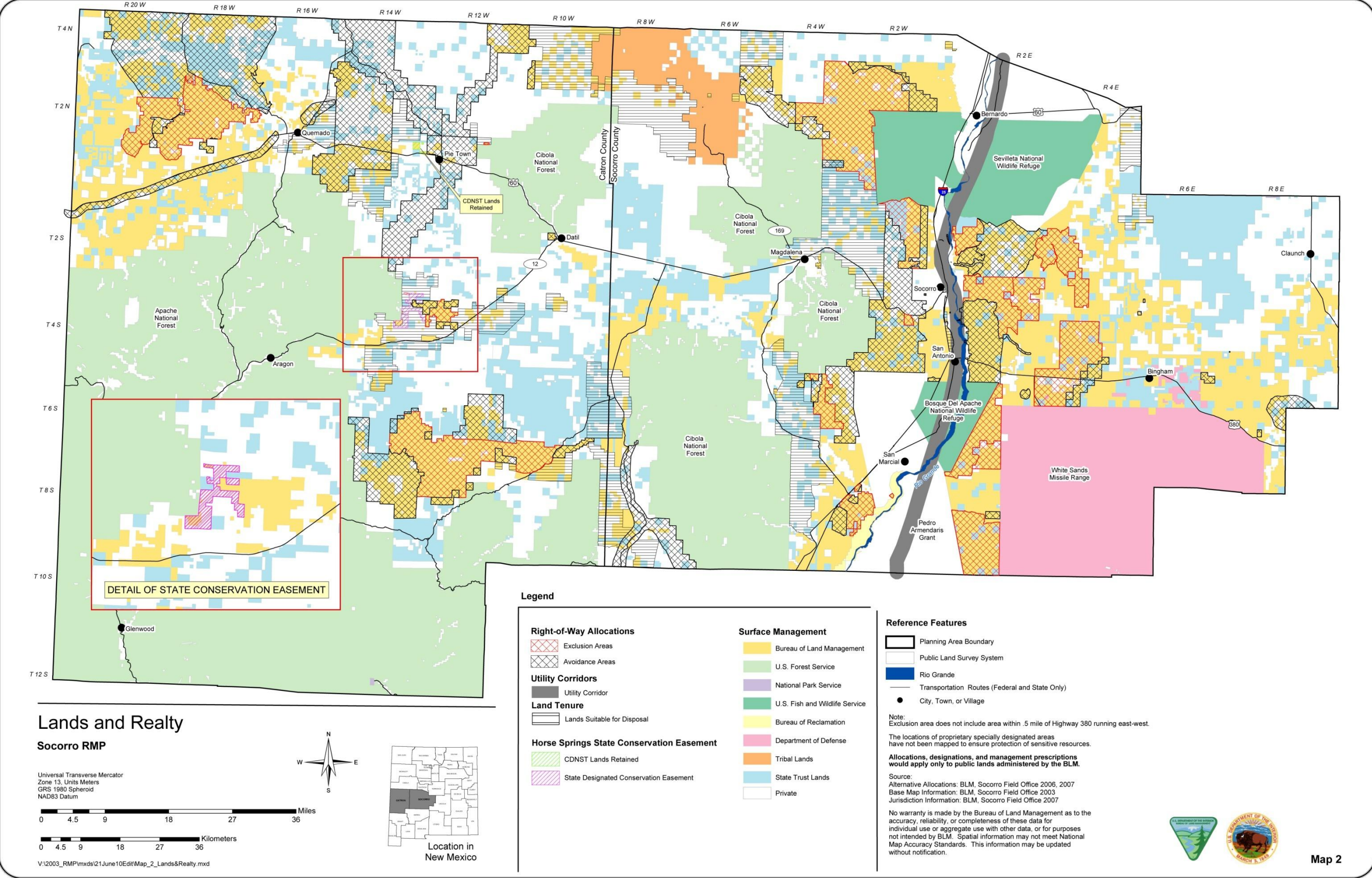
Right-of-way exclusion areas are closed to all forms of new right-of-way development, unless mandated by law. Right-of-way avoidance areas are areas where future rights-of-way may be granted only when no feasible alternative route is available. A plan for managing right-of-way exclusion and avoidance areas is provided as part of Appendix F: Land/Minerals Disposal Policy and ROW Exclusion/Avoidance Area Plan. Under this RMP, 406,289 acres will be managed as right-of-way exclusion areas and 342,363 acres will be managed as right-of-way avoidance areas (see Map 2). Lands identified as exclusion areas are within WSAs or Class I VRM areas. Lands identified as avoidance areas are within special designations other than WSAs and in VRM Class II areas. A total of 50 percent of BLM-managed surface land are subject to restrictions on right-of-way development (either exclusion or avoidance).

A utility corridor that is generally two miles wide is established along the Interstate 25 corridor (see Map 2). This corridor was one of the four recommended in the Western Utility Group Study (Michael Clayton and Associates, 1992). Applicants requesting new rights-of-way are encouraged to use this corridor. The area within a one-half-mile of Highway 380 in Socorro County will be excluded from the management decisions identified for the Aplomado Falcon habitat area, including the right-of-way exclusion area and closures to fluid mineral leasing and mineral material disposals.

## ***Withdrawals***

Approximately 11,408 acres of land has been withdrawn from entry under all or some of the land or mining laws. In some cases withdrawals may transfer jurisdiction to another Federal agency. Additional land with rare or sensitive resources may be identified for withdrawal if criteria are met (see Appendix F: Land/Minerals Disposal Policy and ROW Exclusion/Avoidance Area Plan) and will be addressed on a case-by-case basis.

All withdrawals have been or will be reviewed according to the requirements of laws and existing guidance. The review is to ensure the reasons for the withdrawals are still valid; concurrence of appropriate agency or landowner; and the necessary acreage needed is retained in withdrawn status. All unused or unnecessary withdrawals will either be terminated or modified to reduce the affected area. Upon revocation or modification of a withdrawal, all or part of the withdrawn land could be restored to multiple uses.





## MINERALS

Management Goal	
Make mineral resources available for development or extraction and encourage development of these resources to meet national, regional, and local needs, consistent with national objectives of an adequate supply of minerals at market prices. At the same time, strive to assure that mineral development is carried out in a manner that reduces environmental impacts and provides for the reclamation of affected land.	
Resource and Planning Issues	Supporting Management Decisions
Fluid mineral leasing (Issues 2 and 3)	<ul style="list-style-type: none"> <li>1,543,095 acres closed to fluid mineral leasing (which includes 1,418,415 acres of nondiscretionary closures). 3,035,925 acres will be open to leasing with standard terms and conditions; and 1,516,824 acres are open to leasing with stipulations in addition to the standard terms and conditions.</li> </ul>
Coal leasing (Issues 2 and 3)	<ul style="list-style-type: none"> <li>Coal leasing may occur on about 3,200 acres in accordance with applicable laws subject to surface owner consultation and additional NEPA analysis, as appropriate.</li> </ul>
Salable minerals (Issues 2 and 3)	<ul style="list-style-type: none"> <li>Exclude 340,066 acres from mineral material disposals in special designations.</li> </ul>
Mineral withdrawal (Issues 1, 2, and 3)	<ul style="list-style-type: none"> <li>Manage 11,408 acres currently withdrawn from mineral entry. Petition to withdraw 70,869 acres of Federal mineral estate from location and entry under the mining laws.</li> </ul>

The BLM is responsible for managing all 6 million acres of subsurface Federal mineral estate within the Planning Area, including minerals underlying land managed by private, State, and other Federal agencies. The BLM coordinates closely with other surface and subsurface owners or managers to ensure surface resource issues are considered before Federal surface development or mineral development occurs on split estate land. It is BLM policy to make mineral resources available for disposal and to encourage development of mineral resources to meet national, regional, and local needs, consistent with the national objective of maintaining an adequate supply of minerals at reasonable market prices. In addition, the BLM regulates mineral development to reduce environmental impacts in accordance with applicable law. Applicable laws are summarized in Appendix B: Acts of Authority and Mandates for the BLM.

Policy guidance for managing mineral resources is provided in several pieces of legislation as well as BLM manuals and handbooks. Many of these are described in Appendix B. The key directives are that (1) public land is to be managed for multiple use and (2) if it is determined to be necessary to place certain areas under special management, then that management must be the least restrictive necessary to protect the resource of concern to ensure that the area remains open to other uses.

Recent instruction memoranda have provided bureau wide guidance regarding management of abandoned mine land. These have provided specific instruction for State and field offices to develop work plans for abandoned mine land program activities to foster long-range planning for interagency program coordination, strategic program support, and budget justifications. In New Mexico, the BLM works closely with the abandoned mine lands program in the State Energy Mineral and Natural Resources Department to reclaim abandoned mines on public land.

The planning analysis is based on the reasonably foreseeable development for leasable, locatable, and salable minerals, which includes forecasts of future exploration and development activity (BLM 2003g). If the actual level of intensity or amount or type of surface disturbance varies substantially from the forecasts, the Socorro Field Office may determine it is appropriate to amend the RMP in the future and/or prepare additional NEPA documentation to analyze potential impacts of the variation in the forecasts.

In accordance with Instruction Memorandum 2005-219, the BLM's New Mexico State Office will develop work plans for abandoned mine land program activities. Initial plans will cover an extended period from Fiscal Year 2007 through Fiscal Year 2013. These plans will determine the extent and type of program regarding abandoned mine land that will be carried out in the BLM's Planning Area. As noted above and contingent upon funding, work will continue to be done according to the Memorandum of Understanding between the BLM and the New Mexico Energy, Minerals and Natural Resources Department, Abandoned Mine Lands Bureau.

### ***Leasable Minerals***

Leasable minerals include nonrenewable energy fluid minerals (oil and gas), nonrenewable energy solid minerals (coal), and nonrenewable non energy fluid minerals (carbon dioxide and helium). The BLM is responsible for managing all leasable Federal mineral estate—approximately 6 million acres in the Planning Area—regardless of surface area management or ownership.

Nondiscretionary closures include land that is closed to fluid mineral leasing for reasons that are beyond the discretion of the BLM. In the Planning Area, these closures include all WSAs; the White Sands Missile Range and other military installations; National Park Service land; land managed by USFWS and NMDGF; and towns, villages, and incorporated cities.

Approximately 1,543,095 acres of Federal mineral estate will be closed to fluid mineral leasing to protect sensitive resources. This includes 1,418,415 acres of Federal mineral estate that is closed non-discretionarily. Approximately 3,035,925 acres will be open to mineral leasing with standard terms and conditions, and 1,516,824 acres will be open to leasing with stipulations in addition to the standard terms and conditions. Federal mineral estate underlying surface area managed or owned by private, State, or other Federal agencies will be managed in close coordination with the landowners or agencies.

The Governor of New Mexico has designated a conservation easement at Horse Springs Ranch to protect wildlife habitat. Within this Horse Springs Conservation Easement (CE), the New Mexico State Director of the BLM maintains the discretion to decline to issue fluid mineral leases on a case-by-case basis. In recognition of the particular resource concerns of this CE, the State Director will carefully exercise this discretion for any lease proposal in the surface area covered by the CE. Additional details about this conservation easement can be found within the Record of Decision for this RMP.

Existing leases in areas identified as proposed for discretionary closure will not be renewed after the term of the lease is complete. Outside of the closures, public land is open to fluid mineral leasing under standard terms and conditions established in the lease unless additional stipulations are determined necessary to protect resources. A description of standard lease terms and conditions and stipulations are in Appendix I: Minerals Management. A total of 496,000 acres will be associated with NM-5, a lease notice for lessees in the White Sands Missile Range Evacuation Area (see Appendix I). In areas of split estate, the surface owner or manager is responsible for determining strategies to protect surface resources. Fluid leasing beneath Federal land other than those administered by the BLM will be subject to land use planning determinations and/or withdrawal provisions. Federal mineral estate underlying land managed or owned by other entities will be managed by the BLM in accordance with applicable plans and in cooperation with the surface owner or manager. Additional NEPA analysis may be required to address site-specific considerations related to a proposed action.

Surface and mineral estate withdrawals, disposals, or BLM development will be restricted within coal fields. Coal leasing will occur in accordance with applicable laws in areas identified as potentially suitable for coal leasing.

A total of about 3,200 acres in the BLM's Planning Area have been identified as not unsuitable for coal leasing (see Appendix I: Minerals Management). Coal leasing in these areas will occur in accordance with applicable laws subject to surface owner consultation and additional NEPA analysis, as appropriate.

### ***Locatable Minerals***

Locatable mineral resources include metallic minerals (e.g., gold, silver, uranium) and nonmetallic minerals (e.g., gemstones, fluorspar, perlite). Unless identified as withdrawn to location and entry under the mining laws, public land will be open to mineral exploration and development activities in accordance with applicable laws. WSAs are managed for locatable minerals pursuant to 43 CFR 3802.

A total of 11,408 acres of BLM-administered surface land will continue to be managed as withdrawn from mineral entry (see Appendix I: Minerals Management). The BLM will petition to withdraw up to an additional 70,869 acres of Federal mineral estate from location and entry under the mining laws as follows: a total of 43,952 acres within potential Aplomado Falcon habitat areas; 149 acres within the Fort Craig SMA; 23,567 acres of medium and high potential within the Ladron Mountain ACEC; 2,881 acres within the Protection Zone of the Zuni Salt Lake ACEC; and an additional 320 acres within The Box SRMA. The remainder of public land within the Planning Area is open for mineral entry unless restricted by law and policy.

### ***Salable Minerals***

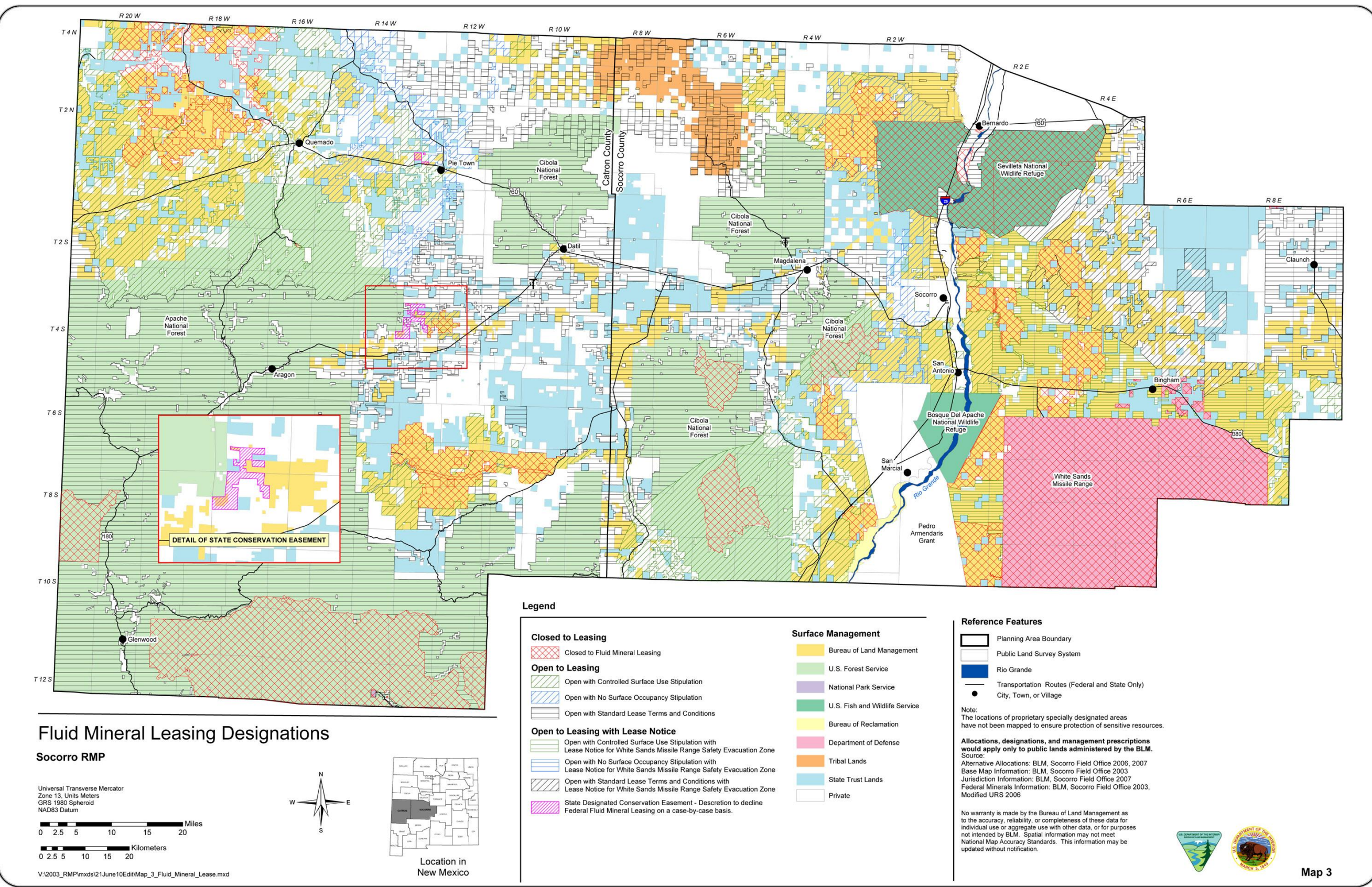
Salable mineral resources include sand, gravel, limestone, cinders, and building stone. Federal land in the Planning Area is an important source of mineral materials for construction projects in the region, including sand and gravel, rock and stone, and other fill materials. The Socorro Field Office issues Contracts and Free Use Permits for the removal of mineral materials managed under 43 CFR 3600. These contracts and permits can be issued for up to 5 years and 200,000 cubic yards of material per year, for a total contract quantity of 1 million cubic yards of material. Any material in excess of this quantity must be offered through a competitive bid. A mining plan, reclamation plan, and weed management plan are required with the contract or permit application, and plans must conform to modern mining and reclamation standards. The proposed operation plan is analyzed through the NEPA process with the preparation of an environmental assessment. The Socorro Field Office is responsible for inspection and enforcement of all contracts and permits.

The 1989 decision to designate pits for the sale of sand and gravel, consistent with other resources, is carried forward under this RMP.

On BLM-administered land, 340,066 acres will be excluded from mineral material disposals, which includes all WSAs and other special designations as indicated in Chapter 3: Special Designations. This total includes 40,104 acres of potential Aplomado Falcon habitat areas on BLM-managed surface estate that will be excluded from mineral material disposals with the exception of public land within 0.5 mile of existing highways. The remainder of the BLM's jurisdiction will be open for extraction of mineral material unless restricted by law or policy.



Map 3





## NOXIOUS WEEDS AND INVASIVE SPECIES

Executive Order (EO) 13112, Invasive Species; the Federal Noxious Weed Act of 1974; the New Mexico Noxious Weed Management Act of 1978; and the Federal Plant Protection Act of 2000 require the development of a weed management program. This program focuses on the inventory of existing infestations, prevention of noxious weed invasion, monitoring revegetation efforts for invasive weeds, and assessment of the success of weed control efforts.

EO 13112 also requires Federal agencies to: (1) identify actions that may affect invasive species; (2) use relevant programs to prevent introduction of invasive species; (3) detect, respond, and control such species; (4) monitor invasive species populations; (5) provide for restoration of native species; (6) conduct research on invasive species; and (7) promote public education.

Management of noxious weeds will include: (1) conducting field searches and inventories of invasive and noxious weeds throughout the year, (2) preventing the establishment of new infestations by closely monitoring newly disturbed and burn areas, (3) using an integrated weed-management approach that includes Best Management Practices to prevent and control weed infestations, and (4) developing and continuing public outreach programs for invasive and noxious weed management.

Noxious weed management will continue under the guidelines established in the following governing instruments:

- Socorro County Voluntary Noxious Plant Control Program
- Memorandum of Understanding among many parties, including the City of Socorro, Socorro County Commissioners, Socorro Soil and Water Conservation District, Natural Resource Conservation Service, the BLM, New Mexico Highway Department, New Mexico State Land Office, and Cooperative Extension Service
- Assistance Agreement between the Socorro Soil and Water Conservation District and the BLM
- Socorro County's Integrated Weed Management Plan for the Control and Management of Invasive/Noxious Weeds
- Socorro County's Invasive/Noxious Weed Rapid Response Plan

## PALEONTOLOGICAL RESOURCES

Management Goal	
Manage and protect paleontological resources found on public land.	
Resource and Planning Issues	Supporting Management Decisions
Paleontological Resources (Issue 5)	<ul style="list-style-type: none"><li>• Locate and evaluate paleontological resources based on management prescriptions by class and potential for occurrence.</li></ul>

The BLM has developed objectives for paleontological resources (BLM Manual 8270, *Paleontological Resource Management*; BLM Handbook H-8270-1, *General Procedural Guidance for Paleontological Resource Management*) to provide protection of the resources. It is the policy of the BLM to manage paleontological resources to facilitate research and scientific and/or authorized collection on public land, and to avoid or mitigate adverse impacts that could result from other activities.

The BLM State Office has an assistance agreement with the New Mexico Museum of Natural History and Science and the New Mexico Museum of Natural History Foundation to ensure the care, protection, and

storage of paleontological resources collected from public land in New Mexico. The museum holds a statewide permit with the BLM for the collection of vertebrate fossils from public land.

The overall objectives for the paleontological resources program are to facilitate scientific, educational, and recreational uses of fossils, foster public awareness and appreciation for the area's paleontological heritage, and manage paleontological values to protect and preserve specimens that are present in the Planning Area. The BLM will continue to use existing partnerships and information collected from the paleontological collection permits to evaluate the importance of specific areas on public land.

To achieve resource protection objectives, public land has been assigned to management classes related to the potential for paleontological resources based on geology. When surface-disturbing activities are proposed, appropriate management prescriptions will be applied for each potentially affected management class. Mitigation for proposed actions will be addressed on a case-by-case basis, as needed.

## RANGELAND MANAGEMENT

Management Goal	
Manage the rangeland in an efficient manner by providing effective management on those allotments where it is needed most to maintain, improve, and monitor the rangeland health. The program will follow current BLM policy, regulation, and law.	
Resource and Planning Issues	Supporting Management Decisions
Rangeland Management ( <i>Issues 2 and 5</i> )	<ul style="list-style-type: none"> <li>Allocate long-term increases in vegetation to wildlife, watershed, and livestock. The allocations will usually be 50 percent to wildlife/watershed and 50 percent to livestock.</li> <li>Conduct rangeland improvements and vegetation treatments to meet BLM policy and resource objectives.</li> <li>Develop allotment management plans to resolve identified resource problems or conflicts.</li> </ul>
Unallotted Areas ( <i>Issue 5</i> )	<ul style="list-style-type: none"> <li>Maintain five areas totaling 5,768 acres as unallotted and closed to livestock grazing – the Magdalena Administrative Site, the former Cerro Colorado Allotment, the former North Horse Mountain Allotment, the former Marshall Individual Allotment, and the former San Lorenzo Canyon Allotment.</li> </ul>

Rangeland management is authorized by FLPMA, the Taylor Grazing Act of 1934, and the Public Rangelands Improvement Act of 1978 (see Appendix B). Public rangeland is managed to meet the standards of public land health as established in the New Mexico Standards and Guidelines (see Appendix H: Rangeland Management). If standards are not being met, the livestock grazing management guidelines offer tools to guide the Socorro Field Office in improving those areas. The livestock grazing guidelines are to be implemented at the watershed, allotment, or pasture level if it is determined that the standards are not being met, and that livestock grazing is the cause. Specific application of these guidelines occurs at the field office level in consultation, coordination, and cooperation with lessees, permittees, the interested public, and landowners. Guidelines for activities other than livestock grazing are not mandated through regulation; however, they may be developed should the need arise. If it is determined that the standards are not being met as a result of another activity (e.g., road placement, recreation, etc.), BLM resource specialists will determine the appropriate actions to ensure that standards can be met or that significant progress can be made towards meeting those standards.

Under this RMP, no changes are proposed to Animal Unit Months (AUMs), grazing allotments, or other grazing management decisions that were established through the East Socorro Grazing EIS and the West Socorro Rangeland Management Program EIS. Site-specific Environmental Assessments are ongoing for each allotment. (For additional information on the *East Socorro Grazing EIS* and the *West Socorro*



*Rangeland Management Program EIS*, refer to Appendix B: Acts of Authority and Mandates for the BLM.)

Long-term increases in forage allocation will be allocated to wildlife, watershed, and livestock based on monitoring and other studies to support such increases. The allocations typically will be 50 percent to wildlife/watershed and 50 percent to livestock. In addition, the Soaptree SMA (1,296 acres) will be managed to enhance the ecosystem, while managing for grazing use.

All allotments have been placed into one of three management categories based upon the categorization criteria (see Appendix H: Rangeland Management). The allotments are prioritized within each management category based on similar resource characteristics, management needs, and resource and economic potential. However, allotments may be recategorized as additional resource information becomes available.

The three selective management categories are: Maintain (M), Improve (I), and Custodial (C). The “M” category allotments will be managed to maintain the current satisfactory condition. The “I” category allotments will be managed intensively to improve unsatisfactory condition and/or to resolve resource conflicts. The “C” category allotments will be managed to prevent resource degradation. They have a low potential for improved ecological condition, improvement is not economically feasible, and/or current management is satisfactory, considering the current resource conditions. Initial categorization will be 46 “I”, allotments, 201 “M” allotments, and 5 “C” allotments.

The first priority for funding new rangeland improvements will be given to those allotments that have been identified as not meeting the rangeland standard. The next priority will be given to allotments according to their categorization, beginning with “I” category, followed by “M” and “C” categories. On “I” category allotments that contain crucial wildlife habitat and/or critical watershed, the allocation may be greater than 50 percent for wildlife and watershed. Where forage increases occur on allotments with no resource problems or conflicts, the allocation of forage to livestock may be greater than 50 percent. Each case will be handled individually based on site-specific analysis and to conform to the multiple-use objectives of the RMP.

Contributions for rangeland improvement work in the form of labor, material, equipment, and funding will be encouraged, and will be a factor in determining priority ranking for allocating funds. Vegetative treatments will be conducted to control the growth and spread of undesirable vegetation or to increase the abundance of desirable vegetation. Vegetative treatments could include prescribed fire, mechanical treatment by hand (chainsaws) or heavy equipment (chaining, mowing, mulching, grubbing, etc.), or chemical treatment. Areas that are potentially suitable for treatment will be analyzed in accordance with NEPA. All projects will be consistent with multiple-use objectives and this RMP.

Allotment management plans will be developed as necessary to resolve identified resource problems or conflicts. The level of intensity and the suggested management actions for each allotment management plans will vary depending on the problems encountered and the objectives outlined for the allotment. Management actions may include proper placement of rangeland improvements, distribution of livestock, kind and class of livestock, salting, grazing systems, and vegetative land treatments. These plans will be prepared in accordance with Section 8 of the Public Rangeland Improvement Act of 1978, in “careful and considered, consultation, cooperation, and coordination” with affected allottees, affected interest and other interested parties (target group). Involvement of the target group will be at the request of the allottee. The target group consists of landowners, such as the State Land Commissioner or other lessees, New Mexico Department of Agriculture, NMDGF, Range Improvement Task Force, Natural Resource Conservation Service, the Forest Service, and other interested parties.

Allotment management plans will include a grazing system to provide periodic rest to plants from livestock grazing. The type of system implemented will be tailored to meet the needs of the allotment and will be developed through consultation with the allottee. Consideration will be given to allottee needs, level of management, vegetation objectives, the degree and type of resource conflicts, initial costs to implement the system, and other factors.

Grazing allotments within areas identified as potential Aplomado Falcon habitat will be managed for a stable or increasing trend in range condition or desired plant community. Monitoring of trend plots will be prioritized in the area identified for special management for Aplomado Falcon.

The 1989 RMP directed the development, review, and revision of allotment management plan; this decision as well as the areas that have been closed to livestock grazing will be continue under this RMP. The following table shows the area and the acreage closed to grazing.

**Table 3: Areas Closed to Livestock grazing**

<b>Description of Area</b>	<b>Acres</b>
Magdalena Administrative Site	1,207
Former Cerro Colorado Allotment	1,456
Former North Horse Mountain Allotment	1,120
Former Marshall Individual Allotment	403
Former San Lorenzo Canyon Allotment	1,072
<b>Acres Unallotted and Closed to Grazing</b>	<b>5,258</b>
Fort Craig	149
Portions of Datil Well Campground	160
Socorro Nature Area	201
<b>Acres Never Allotted</b>	<b>510</b>
<b>Total Acres Closed to Livestock Grazing</b>	<b>5,768</b>

Since the implementation of the 1989 RMP, there have been land exchanges involving New Mexico State Land and private land. Due to these exchanges, federal Animal Unit Months (AUMs) have changed on these allotments to reflect the increase or decrease of public land within the allotment boundary. The actual number of livestock has not changed only the percentage of AUMs associated with the change on the allotment. Some allotments have been eliminated due to land exchanges involving the exchange of all the public land within the allotment.

Also, other allotments such as the Monte Negro, Blackington Mountain West, and the Stokes Flat Allotments were combined with adjoining allotments. This action facilitated grazing management on the allotments. An example of this action is The Monte Negro Allotment. The Monte Negro Allotment was combined with the Canada Colorado and Canon Alamito Allotments. There was no change of total livestock numbers on the allotment. The carrying capacities of the allotments were 73 cattle year long (CYL), 47 CYL, and 61 CYL. The total number of cattle that are authorized on the Monte Negro Allotment is 181 CYL. The numbers of AUMs authorized on the individual allotments were 720 AUMs, 480 AUMs, and 720 AUMs in the 1989 RMP for a combined total of 1,920. (Note: The Draft RMP listed the number of AUMs at 1,929 AUMs. The difference of nine AUMs is due to a change of land tenure. The BLM acquired a portion of the State Land within the allotment and this acquisition increased the amount of public land and the number of AUMs by nine. The total permitted livestock did not change and is still at 181 CYL. The overall carrying capacity was not changed on the allotments but were combined and allowed for enhanced grazing management.)

## RECREATION

Management Goal	
Provide for a wide range of highly desirable recreation experiences commensurate with demand, both non-motorized and motorized, for visitor and community residents, while protecting other resource values. Manage recreational use to protect the health and safety of visitors and resolve user conflicts. Capitalize on the unique resources and diverse management situations of the Field Office by providing uncommon recreation opportunities and experiences.	
Resource and Planning Issues	Supporting Management Decisions
Special Recreation Management Areas (SRMAs) and other special designations (Issue 1)	<ul style="list-style-type: none"> <li>Designate five SRMAs (The Box, Datil Well, Gordy's Hill, Quebradas Back Country Byway, Socorro Nature Area) with 12,633 total acres and one ACEC (Cerro Pomo) to manage for recreation use. Identify one SMA (Continental Divide National Scenic Trail) to manage for recreation use.</li> </ul>

FLPMA provides for management of outdoor recreation on public land. Section 202(c)(9) calls for land use planning consistent with statewide outdoor recreation plans. Other national laws that govern recreation management in the BLM's Planning Area include the National Trails System Act of 1968, Land and Water Conservation Fund of 1964, and Recreation and Public Purposes Act. The BLM's outdoor recreation program strives to provide a broad spectrum of resource-dependent recreation opportunities to meet the needs and demands of the public and visitors; to foster agency-wide efforts to improve services to the visiting public; to maintain high-quality recreation facilities to meet public needs and enhance the image of the agency; and to improve the public understanding and support of the BLM by effectively communicating the agency's multiple-use management approach to the recreation visitor.

Most public land is managed to maintain a freedom of recreational choice with a minimum of regulatory constraints. Current management direction for dispersed recreation is provided in 43 CFR 8300 and subsequent BLM manuals, guidance, and policy. The BLM's *Priorities for Recreation and Visitor Services* are described in the "Purple Book," dated May 2003, a work plan for fiscal years 2003-2007.

Extensive Recreation Management Areas (ERMAs) are managed for custodial outcomes where visitor health and safety, user conflict and resource protection are emphasized. Where the nature of the resource attracts intensive recreational use, public land may be managed as a Special Recreation Management Area (SRMA). SRMAs are managed for structured recreation outcomes consisting of activities, experiences, and benefits along with the previously mentioned ERMA responsibilities.

Recreation use in the BLM's Planning Area will be managed to protect the health and safety of visitors; protect natural, cultural, and other resource values; facilitate public enjoyment of public land; and resolve or mitigate user conflicts. The recreation opportunity spectrum provides management objectives for different types of recreation settings, and public land will be managed in accordance with those classifications (see Appendix E: ROS Definitions and VRM Class Objectives).

The Socorro Field Office issues Special Recreation Permits to authorize certain recreational uses of land administered by the BLM. Authority to issue these permits is provided in 43 CFR 2932. Permits are issued for competitive events, commercial events, and educational use. Commercial use is recreational use of public land for business or financial gain. Competitive use is any formally organized or structured use, event, or activity on public land in which there are elements of competition between two or more contestants, registration of participants, and/or a predetermined course or area is designated. Competitive use also includes individuals contesting an established record such as speed or endurance. Educational use is an academic activity sponsored by an accredited institution of learning. The Socorro Field Office will continue to issue special recreation permits after appropriate environmental assessments are completed.

The BLM will continue to cooperate with other agencies in the management of the El Camino Real de Tierra Adentro National Historic Trail in accordance with a comprehensive management plan (National Park Service and BLM 2004). As portions of the trail within the BLM's Planning Area are verified, they will be managed as VRM Class I or II, as prescribed in the El Camino Real de Tierra Adentro National Historic Trail Comprehensive Management Plan. That plan provides management guidance for the trail and implements the provisions of the National Trail Systems Act, which reflects the public's vision for the administration and management of the trail. Specifically, trail administration and partners will work cooperatively to provide coordinated programming and activities that integrate themes, resources, and landscapes at certified sites on private land or protected sites on public land. Resources that best illustrate the trail's significance will be identified and protected on both public and private land (high-potential historic sites and segments). Certification priorities will be assigned to sites and segments that will support interpretive and educational programming and protect significant resources (National Park Service and BLM 2004).

Management direction for the Continental Divide National Scenic Trail (CDNST) SMA is administered by the Forest Service. The BLM will continue to cooperate with the Forest Service to manage sections of the trail within the BLM's Planning Area. In June 2007, the Forest Service initiated a Proposed Directive for the trail in compliance with the National Trails System Act and Study Report. With regard to OHV use on the trail, the following summarizes the management direction for the trail:

- A CDNST segment may be located only on a road (16 USC 1244 (5)) where the following conditions are met: (a) the road is primitive in nature and offers a recreation experience not materially different in quality than that extended by a bona fide hiking and equestrian trail; (b) an affirmative determination has been made that motor vehicle use would not substantially interfere with the nature and purposes of the CDNST; and (c) motor vehicle use would not constitute a safety hazard to hikers-pedestrians and equestrians.
- Motor vehicle use may be allowed on trail segment (16 USC 1246 (c)) of the CDNST: (a) if necessary to meet emergencies; (b) to enable land adjacent landowners or land users to have reasonable access to their lands or where there are valid existing rights; and (c) on a designated motor vehicle route that crosses the CDNST where an affirmative determination has been made that such use would not substantially interfere with the nature and purpose of the CDNST. Motor vehicle use must also be allowed by the overall management direction for the land management plan area.
- Motor vehicle use will be allowed on the a trail segment (16 USC 1246(c)) of the CDNST where the following conditions are met: (a) an affirmative determination has been made that motor vehicle use would not substantially interfere with the nature and purpose of CDNST; and (b) motor vehicle use was allowed by administrative regulations on a National Forest System travel route that was developed prior to November 10, 1978, which is the time of designation of the CDNST by Public Law 95-625.

To manage and protect recreational resources, five SRMAs and one ACEC are designated and one SMA is identified, as listed below:

- The Box SRMA (1,107 acres) – Manage to enhance the areas unique recreational values, primarily rock climbing and bouldering, maintain the scenic quality and ensure protection for cultural sites as well as Desert Bighorn Sheep and bats and their habitats.
- Datil Well SRMA (669 acres) – Manage to provide recreation opportunities (including day use, camping, and group outings), basic services including visitor safety and comfort, facility and grounds maintenance, coordination of employee and volunteer schedules and projects, and development and implementation of interpretation and environmental education programs.

- Gordy's Hill SRMA (7,647 acres) – Manage for recreation uses, including OHV, races, and group events.
- Quebradas Back country Byway SRMA (area within 0.25 mile of the Byway, or a total of 3,130 acres) – Manage for a variety of recreation opportunities and experiences such as driving for pleasure, high scenic quality, geologic sightseeing, interpretation and environmental education, mountain biking, and access to hiking areas such as Presilla and Sierra de Las Cañas WSAs with an emphasis on the development of interpretation opportunities.
- Socorro Nature Area SRMA (80 acres) – Manage for recreational use and to provide environmental education and interpretation opportunities; experiences will be primarily picnicking, hiking, sightseeing in Bosque Habitat, access to the Rio Grande, camping, and mountain biking.
- Cerro Pomo ACEC (28,248 acres, includes the former Mogollon Pueblo SMA) – Manage to protect unique geologic features, paleontological resources, cultural resources, and high scenic quality while preserving appropriate recreation opportunities.
- Continental Divide National Scenic Trail SMA (59,434 acres) – Manage to meet the objectives of the enabling legislation, establish and maintain a trail route through the Planning Area that will meet up with trail routes to the south and the north, and provide a long distance trail hiking experience for the users.

ACECs, SRMAs, and SMAs are shown on *Map 4*, and further information on management of specially designated areas is provided in Chapter 3: Special Designations. Protection of primitive recreation resources is noted as a management concern in the Cerro Pomo ACEC, Ladron Mountain-Devil's Backbone Complex ACEC, and Pelona Mountain ACEC.

The Continental Divide National Scenic Trail will be managed for recreational use and to protect scenic values on the 34 miles of its length within the BLM's Planning Area. Trail corridors will be identified and legal access acquisition in the Pie Town and Quemado areas pursued to the extent possible from willing sellers. Acquisition of legal access will facilitate establishing an unbroken trail route throughout the state.

## RENEWABLE ENERGY

In December 2005, the BLM published a Record of Decision for Implementation of a Wind Energy Program and Associated Land Use Plans. This project is a part of the BLM's National Energy Policy Implementation Plan, an outgrowth of the President's National Energy Policy, which addresses both renewable and nonrenewable energy sources. Under the proposed action of the Final Programmatic EIS, the BLM has developed a Wind Energy Development Program to establish comprehensive policies and Best Management Practices for wind energy development, including right-of-way authorizations, on BLM-managed land. The Socorro Planning Area was identified in the EIS as having a low potential for wind energy development. However, the policies, guidance, and procedures contained in the Record of Decision will be applied to guide development of any future wind energy project that may occur in areas under the Socorro Field Office's jurisdiction.

Renewable energy projects may be proposed on BLM-managed land in the future. These applications will undergo site-specific environmental analysis as part of the right-of-way or commercial lease process. Where applicable, any proposed project could be tiered from the Final Programmatic EIS on Wind Energy Development. The policies, Best Management Practices, and programmatic mitigation identified in the Record of Decision will also apply to any proposed wind energy project in the Socorro Field Office Planning Area. The location of any potential wind energy projects will be determined by the wind resource level and by the location of avoidance and exclusion areas.

There is potential for future harvesting of woodland products on public land for biomass-fueled power generation. If such a project is proposed, it will undergo a site-specific environmental analysis as part of the project development process.

## SOIL AND WATER RESOURCES

Soil Management Goals	
Manage uses to minimize and mitigate disturbances to soils and loss of soil sediments from erosion. Maintain soil stability to protect soil ecological health and long-term productivity.	
Water Resources Management Goals	
Manage uses to maintain or improve overall watershed health by maximizing infiltration for groundwater recharge. Manage uses to maintain or improve surface water quality in watersheds, and watersheds that affect streams that are listed as water quality limited under the Clean Water Act, Section 303 (d). Manage resources to maintain or reduce salinity loading in accomplishing the goals and objectives outlined in the Colorado River Salinity Control Act.	
Surface Water Management Goals	
Maintain and enhance the existing beneficial uses of surface water and protect the function of watersheds for habitat, grazing, and other ecological needs.	
Resource and Planning Issues	Supporting Management Decisions
Watershed Rehabilitation (Issue 2)	<ul style="list-style-type: none"> <li>Identify Puertecito and Stallion SMAs to manage use and activities in critical watersheds. Designate Zuni Salt Lake ACEC to protect resources associated with Zuni Salt Lake.</li> <li>Balance commodity production while providing for the attainment and maintenance of good watershed health, and proper functioning conditions.</li> <li>Rehabilitate areas identified as priority areas through Standard Assessments, and site-specific analysis will be completed.</li> </ul>

### Water Quantity

All water rights are acquired in accordance with New Mexico substantive and procedural law, except where Congress or the Executive Branch has created a Federal reservation with a reserved water right. Surface water rights in New Mexico are based upon the principles of beneficial use and first appropriation, meaning that water rights are ranked in priority according to first beneficial use and all unappropriated water belongs to the State. The New Mexico Office of the State Engineer (State Engineer) administers water rights for the use of ground and surface water in New Mexico. To ensure orderly development of groundwater resources, the State Engineer designates groundwater basins as declared or undeclared. Within a declared groundwater basin, an application to appropriate groundwater must be filed with and approved by the State Engineer. In an undeclared groundwater basin, water is not appropriated and wells may be drilled without approval from the State Engineer. The State Engineer assists the court in the determination of surface water rights and administers water conservation programs.

### Water Quality

The Clean Water Act is the primary law in controlling water quality (see Appendix B: Acts of Authority and Mandates for the BLM), and provides instream water quality standards and maximum permissible pollution discharge levels. In New Mexico, water quality authority is vested in the New Mexico Water Quality Control Commission and primarily administered by the various units of the NMED. Surface water quality standards are established by NMED and approved by the Environmental Protection Agency. Under Section 401 of the Clean Water Act, the State can deny certification of Federal permits based on anticipated water quality impacts. The BLM manages its resources to ensure that development practices comply with State water quality standards.

The BLM partners with New Mexico to control nonpoint-source pollution in accordance with the State's Nonpoint Source Management Program (NMED 1999), which emphasizes the improvement of water quality in degraded stream systems. A memorandum of understanding between the BLM and the State of New Mexico confirms that the BLM is the agency designated by the State of New Mexico for the reduction of nonpoint-source pollution on and from public land. This RMP is the primary document establishing the BLM's compliance with the New Mexico nonpoint-source program. In the past, the Socorro Field Office has met this obligation by committing to specific watershed management programs and by a general policy of preventing excess erosion and sediment transport off public land. Nonpoint-source pollution is seen as optimally controlled by a spectrum of Best Management Practices as prescribed by the Clean Water Act (see Appendix C: Best Management Practices).

Riparian restoration in New Mexico, where not driven by the Endangered Species Act, is accomplished primarily under a variety of State-regulated Clean Water Act programs. The BLM is a major independent contributor to Clean Water Act-related restoration projects. Riparian sites must meet the riparian standard as outlined in the New Mexico Standards and Guidelines. Standards of land health are expressions of physical and biological condition or degree of function required for healthy and sustainable lands, and defines minimum resource conditions that must be achieved. Public land will be assessed to determine if the land is meeting the standard, moving toward the standard, or not achieving or moving toward the standard. Assessments will rely on the best data and information available. The standards for the Field Office are described in Appendix H: Rangeland Management, and include the upland, riparian, and biotic standard. These standards apply to all resource uses on public land.

### ***Soils and Watershed***

The BLM's soil and watershed program emphasizes preventing or avoiding further degradation of soil and water resources, and managing for their conservation. The program supports and influences, and is influenced by other resource programs (i.e., range management, vegetation, and habitat). Policy and guidance for the management of both soil and water resources associated with land administered by the BLM are provided in Manual Sections 7000 and 7100.

The BLM will continue to monitor and assess public land health in accordance with the New Mexico Standards and Guidelines (see Appendix B: Acts of Authority and Mandates for the BLM). As part of the implementation of the New Mexico Standards and Guidelines, we will monitor and restrict surface-disturbing activities on land where potential erosion is a critical concern, and to reduce erosion on allotments.

The BLM's general policy of preventing excess erosion and sediment transport off public land would be realized primarily through the implementation of Best Management Practices (see Appendix C: Best Management Practices). In addition, the BLM will continue the 1989 RMP decision to control water runoff by constructing detention dams, diversions, water spreaders, weirs, and wire checks as needed to reduce erosion.

### ***Special Management Areas***

Two SMAs will be managed in critical watersheds to balance commodity production with the attainment and maintenance of good watershed health and proper functioning conditions. The SMAs are:

- Puertecito SMA (7,156 acres)
- Stallion SMA (10,883 acres)

SMA's are shown on *Map 4*, and further information on management of specially designated areas is provided in Chapter 3: Special Designations. In addition, watershed rehabilitation activities will be identified through assessment of the New Mexico Standards and Guidelines.

## SPECIAL DESIGNATIONS

ACEC Management Goals	
Identify and designate areas on public land where special management attention is required to protect and prevent irreparable damage to important historic, cultural, paleontological, or scenic values, fish and wildlife resources, or other natural system or processes, or to protect life and safety from natural hazards.	
Agua Fria ACEC (Issues 1 and 6)	<ul style="list-style-type: none"> <li>▪ Eliminate the Agua Fria ACEC and incorporate the area into the Cerro Pomo ACEC.</li> </ul>
Cerro Pomo ACEC (Issues 1 and 6)	<ul style="list-style-type: none"> <li>▪ Designate 28,248 acres as the Cerro Pomo ACEC for protection and management of recreational, cultural, and other resources.</li> </ul>
Horse Mountain ACEC (Issue 1 and 5)	<ul style="list-style-type: none"> <li>▪ Designate 5,388 acres as Horse Mountain ACEC for the protection and management of wildlife habitat and recreational resources.</li> </ul>
Ladron Mountain-Devil's Backbone Complex ACEC (Issues 1 and 5)	<ul style="list-style-type: none"> <li>▪ Designate 57,474 acres as Ladron Mountain-Devil's Backbone Complex ACEC for the protection and management of wildlife habitat, scenic resources and cultural resources.</li> </ul>
Mockingbird Gap ACEC (Issues 1 and 6)	<ul style="list-style-type: none"> <li>▪ Manage 8,685 acres as the Mockingbird Gap Proprietary ACEC for the protection and management of cultural resources.</li> </ul>
Pelona Mountain ACEC (Issues 1 and 5)	<ul style="list-style-type: none"> <li>▪ Designate 51,091 acres as the Pelona Mountain ACEC for the protection and management of wildlife habitat, recreation, and other resources.</li> </ul>
Sawtooth ACEC (Issues 1 and 5)	<ul style="list-style-type: none"> <li>▪ Designate 125 acres as the Sawtooth Proprietary ACEC to protect and manage special status plants.</li> </ul>
Zuni Salt Lake ACEC (Issues 1, 3, 5, and 6)	<ul style="list-style-type: none"> <li>▪ Designate 46,746 acres as the Zuni Salt Lake ACEC for the protection and management of cultural resources, sacred sites, and hydrologic resources.</li> </ul>
<b>Total</b>	<ul style="list-style-type: none"> <li>▪ Propose a total of 197,757 acres of BLM-managed surface estate for designation as ACECs.</li> </ul>

Back Country Byway Management Goals
Provide back country areas where people can drive for pleasure to experience scenic corridors and a variety of outdoor activities.

SMA Management Goals	
Identify and designate areas on public land that requires special management by the BLM to protect one or more resource values. SMA's may include nonpublic land that the BLM wishes to acquire or bring under a Cooperative Management Agreement to manage the valued resource better.	
Continental Divide National Scenic Trail SMA (Issues 1 and 4)	<ul style="list-style-type: none"> <li>▪ Designate 59,434 acres as the Continental Divide National Scenic Trail SMA and establish corridors to pursue legal access (from willing sellers) in the Pie Town and Quemado areas.</li> </ul>
Fort Craig SMA (Issues 1 and 6)	<ul style="list-style-type: none"> <li>▪ Manage 149 acres as the Fort Craig SMA to protect, preserve, and interpret the Fort Craig Historical Site.</li> </ul>
Newton Site SMA (Issues 1 and 6)	<ul style="list-style-type: none"> <li>▪ Designate 6,789 acres as the Newton Site Proprietary SMA for the protection and management of cultural resources.</li> </ul>
Playa Pueblos SMA (Issues 1 and 6)	<ul style="list-style-type: none"> <li>▪ Identify 203 acres as the Playa Pueblos Proprietary SMA to protect cultural resources.</li> </ul>
Puertecito SMA (Issues 1 and 2)	<ul style="list-style-type: none"> <li>▪ Manage 7,156 acres as the Puertecito SMA for the management of critical watershed.</li> </ul>



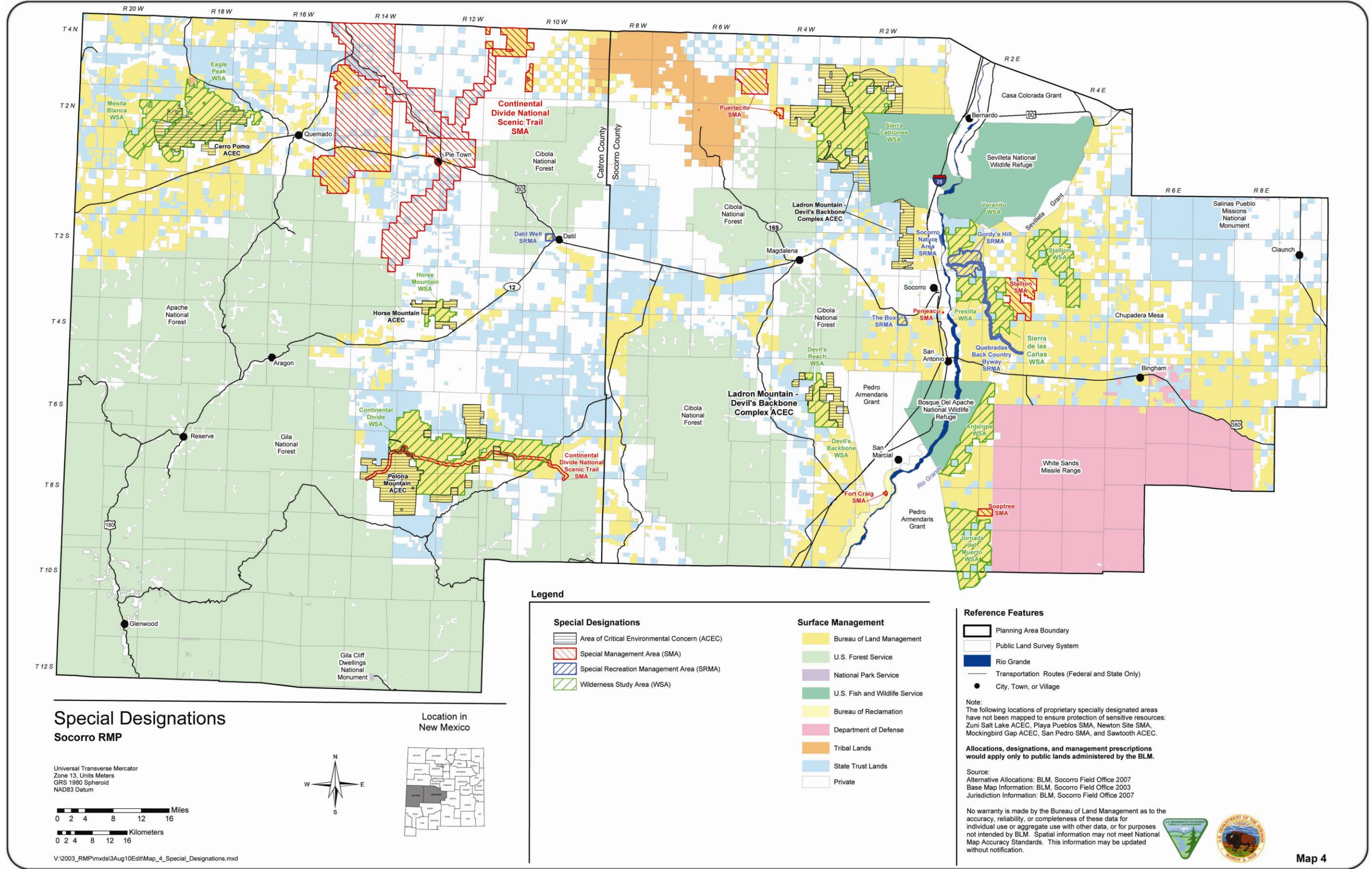
San Pedro SMA (Issue 1)	▪ Manage 1,201 acres as the San Pedro Proprietary SMA for the protection of special status plants.
Soaptree SMA (Issues 1 and 2)	▪ Manage 1,296 acres as the Soaptree SMA for the protection and management of vegetation resources.
Stallion SMA (Issues 1 and 2)	▪ Designate 10,883 acres as the Stallion SMA for the management of watershed resources.
Teypama/Penjeacu SMA (Issues 1 and 6)	▪ Designate 11 acres as the Penjeacu SMA for the protection and management of cultural resources.
<b>Total</b>	▪ Identify a total of 85,351 acres of BLM-managed surface estate as SMAs.

<b>SRMA Management Goals</b>	
Provide opportunities for a variety of outdoor recreation opportunities in designated areas while protecting other resources.	
The Box SMA/SRMA (Issue 1)	▪ Designate 1,107 acres as The Box SRMA for the protection and management of recreation, wildlife, and cultural resources.
Datil Well SRMA/SMA (Issue 1)	▪ Designate 669 acres including the campground as the Datil Well SRMA for the protection and management of recreation and cultural resources.
Gordy's Hill SRMA (Issues 1 and 4)	▪ Designate 7,647 acres as the Gordy's Hill SRMA for management of recreational uses, including OHV.
Quebradas Back Country Byway SRMA (Issues 1 and 4)	▪ Designate 24 miles of road and 3,130 acres as the Quebradas Back Country Byway SRMA for management of recreation and scenic resources.
Socorro Nature Area (Issue 1)	▪ Designate 80 acres as the Socorro Nature Area SRMA for protection and management of recreation resources and environmental education purposes.
<b>Total</b>	▪ Designate a total of 12,633 acres of BLM-managed surface estate as SRMAs.

<b>Trail Management Goals</b>
Provide a variety of diverse motorized and non-motorized opportunities along trails, which may include recreational, scenic, historic or cultural values.

<b>WSA Management Goals</b>	
Manage WSAs in accordance with the Interim Policy and Management Guidelines for Lands Under Wilderness Review. Manage WSAs in a manner that does not impair their suitability for designation as wilderness; subject to valid existing rights.	
WSAs (Issue 1)	▪ Manage all 13 WSAs totaling 291,826 acres according to the Interim Management Policy. Any WSAs released from wilderness review would be managed as described below.

Map 4



## TRANSPORTATION AND TRAVEL MANAGEMENT

Management Goal	
Manage OHV use to protect resource values, promote public safety, provide OHV use opportunities where appropriate, and minimize conflicts among various users. Address all resource use aspects and accompanying modes and conditions of access and travel across public land; including motorized, non-motorized, and mechanized forms of travel.	
Resource and Planning Issues	Supporting Management Decisions
OHV Area Designations (Issues 2 and 4)	<ul style="list-style-type: none"> <li>Designate 117,921 acres as closed to motorized travel; 486,842 acres as limited to existing routes; and 902,782 acres limited to designated routes. No public land will be designated as open to cross-country travel.</li> </ul>
Routes Designations within WSAs (Issues 1, 2, and 4)	<ul style="list-style-type: none"> <li>Designate 79.25 miles of routes as open, 76.75 miles as closed (except for authorized uses), and 98.38 miles as closed and rehabilitated within WSAs.</li> </ul>
Route closures outside of WSAs (Issues 2 and 4)	<ul style="list-style-type: none"> <li>Close approximately 26 miles of routes outside of WSAs to address wildlife concerns</li> </ul>

The policy set forth in 43 CFR 8340 provides for OHV use as a legitimate activity on public land wherever it is compatible with other resource management objectives. Additional policy guidance, definitions, and other information on OHV designations are provided in Appendix J: OHV Areas and Route Designations.

Management direction associated with access typically is intended to enhance land management and protect unique resources or values where the BLM determines it necessary. Guidance for OHV designations in the land use planning process is provided in Appendix C of BLM Handbook H-1601-1, Land Use Planning Handbook. BLM Handbook 9113 – Roads provides guidelines and standards for the construction and maintenance of transportation system roads on public land.

OHV use will be managed in accordance with applicable laws, which include the designation of areas that are open, limited, or closed to OHV use. Additionally, 43 CFR 8341 prohibits the operation of an off-road vehicle (now referred to as an off-highway vehicle, or OHV) in violation of state laws and regulations relating to use, standards, registration, operation, and inspection of off-road vehicles. To the extent that state laws and regulations do not exist or are less stringent, the regulations in this part are controlling. The State of New Mexico passed legislation to require registration of OHV, successful completion an off-highway vehicle safety training course by persons under age 18, and provide regulations for safe operation of OHVs including requiring the use of safety helmets.

### **Designation of OHV Areas**

Cross-country use is permitted in areas designated as open for such travel; however, undue and unnecessary degradation of resources is not permitted on any area of public land under 43 CFR 8340. Exceptions may be made to OHV designations to accommodate emergency or permitted or authorized uses. This use is allowed for by the regulations governing OHV operations on public land. An off-road vehicle or OHV is defined by 43 CFR 8340.05 as any motorized vehicle capable of, or designed for travel on or immediately over land, water, or other natural terrain, excluding (1) any non amphibious registered motorboat; (2) any military, fire, emergency, or law enforcement vehicle while being used for emergency purposes; (3) any vehicle whose use is expressly authorized by the authorized officer, or otherwise officially approved or permitted; (4) vehicles in official use by administering agencies such as the BLM or other agency; and (5) any combat or combat support vehicle when used in times of national defense emergencies.



All public land is required to be designated for OHV use (43 CFR 8342.1). Areas must be classified as open, limited, or closed to motorized travel activities. These designations are shown on the maps in Appendix J: OHV Areas and Route Designations, along with the definitions for these designations. As shown in *Map 5*, 486,842 acres will be limited to existing routes, 902,782 acres will be limited to designated routes, and 117,921 acres will be closed to motorized travel (for definitions, see Appendix J: OHV Areas and Route Designations). No public land is designated as open to cross-country travel.

### **Route Designations**

A travel management network within the 13 WSAs is identified in this RMP. Throughout all WSAs, about 79 miles of routes will be open to motorized travel, 98 miles will be closed for rehabilitation, 77 miles will be available for authorized uses only, and 175 miles will be closed. See Table 4.

**Table 4: Route Designations in Wilderness Study Areas**

Wilderness Study Area	Open	Closed (Rehabilitate)	Closed (Authorized Use Only)	Total Closed
Antelope	4.00	10.50	4.50	15.00
Continental Divide	23.00	12.50	26.50	39.00
Devil's Backbone	0.00	5.00	3.50	8.50
Devil's Reach	0.00	0.00	0.00	0.00
Eagle Peak	21.00	16.50	13.00	29.50
Horse Mountain	0.00	7.00	1.50	8.50
Jornada del Muerto	9.75	2.50	2.75	5.25
Mesita Blanca	4.00	6.50	3.00	9.50
Presilla	0.00	11.00	0.00	11.00
Sierra de Las Cañas	0.00	0.38	0.25	0.63
Sierra Ladrones	15.50	9.00	15.25	24.25
Stallion	2.00	6.00	11.00	17.00
Veranito	0.00	6.50	2.50	9.00
<b>Totals</b>	<b>79.25</b>	<b>93.38</b>	<b>83.75</b>	<b>177.13</b>

*NOTE: Maps are included in Appendix J.*

Maps of route designations are provided for each WSA in Appendix J: OHV Areas and Route Designations. Cross-country motorized travel will not be permitted within WSAs, nor will motorized travel on unauthorized routes. Outside of WSAs, travel will be managed and planned as described below.

In addition, approximately 26 miles of routes outside areas with special designations will be closed to address wildlife concerns (see Wildlife, Riparian Habitat, and Special Status Species). Where impacts to other resources are occurring as a result of roads or vehicle use, additional miles of roads could be closed as necessary to protect or recover resources.

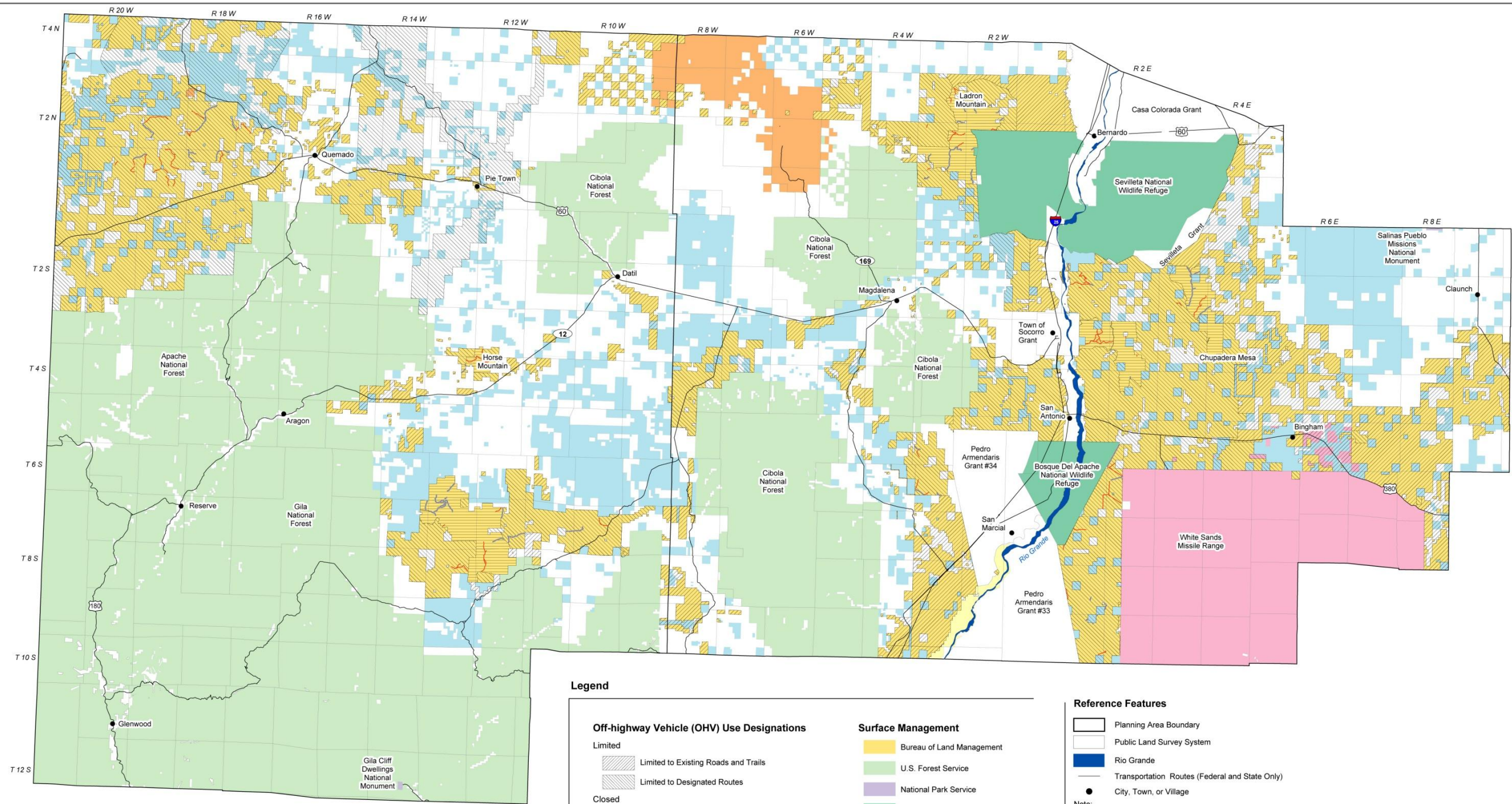
### **Future Travel Management Planning**

Appendix C of H-1601-1, Land Use Planning Handbook, states that a defined travel management network must be completed during the development of the land use plan to the extent practical. If it is not practical to define or delineate the travel management network during the land use planning process, a preliminary network must be identified and a process established to select a final travel management network. During the planning process for this RMP, a definitive route inventory and route designation could not be completed except in the WSAs. The current route network is shown on Map 3-14 of the Proposed RMP/Final EIS. Until the final travel management network is established, motorized travel will be limited to designated routes within the BLM's Planning Area as defined by Map 3-14, unless specifically identified otherwise within this RMP. It should be noted that mountain bikes and other mechanized

modes will be regulated as OHVs or other motorized uses in this plan. Mechanized modes (i.e., mountain bikes, wagons, wheeled-game carriers) and designations will be further defined in upcoming travel management planning for the Socorro Field Office in collaboration with user and interest groups.

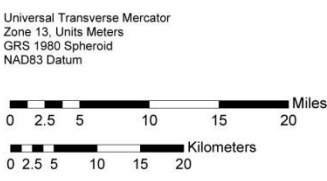
Preliminary travel management plan networks will be developed for areas outside of WSAs within 5 years of the Record of Decision for this RMP (contingent upon available funding and staff resources). Priority areas for completing these travel management plans are as follows: (1) Gordy's Hill, (2) ACECs, (3) SRMAs, (4) SMAs, and (5) all other BLM-managed land.





# Off-Highway Vehicle Use Designations

Socorro RMP/EIS



## Legend

### Off-highway Vehicle (OHV) Use Designations

- Limited**
- Limited to Existing Roads and Trails
  - Limited to Designated Routes
- Closed**
- Closed to OHV Use
  - Closed Roads

### Surface Management

- Bureau of Land Management
- U.S. Forest Service
- National Park Service
- U.S. Fish and Wildlife Service
- Bureau of Reclamation
- Department of Defense
- Tribal Lands
- State Trust Lands
- Private

### Reference Features

- Planning Area Boundary
- Public Land Survey System
- Rio Grande
- Transportation Routes (Federal and State Only)
- City, Town, or Village

Note:  
The locations of proprietary specially designated areas have not been mapped to ensure protection of sensitive resources.

Allocations, designations, and management prescriptions would apply only to public lands administered by the BLM.

Source:  
Alternative Allocations: BLM, Socorro Field Office 2007  
Base Map Information: BLM, Socorro Field Office 2003  
Jurisdiction Information: BLM, Socorro Field Office 2007

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Map 5

## VEGETATION (INCLUDING SPECIAL STATUS SPECIES)

Management Goal	
Achieve healthy, productive, and sustainable upland and riparian communities within the capability of a site through Best Management Practices and appropriate public use. Vegetation will be managed to achieve the type, amount, and/or pattern of vegetation that minimizes erosion and assists in meeting rangeland health standards and State and Tribal water quality standards. Desired conditions for upland plant communities include soils that are stabilized and exhibit infiltration and permeability rates that are appropriate for the soil type, climate, and landform. Riparian vegetation will be managed to achieve a diverse age and structural composition that withstands high stream flows, captures sediment, recharges groundwater, and provides high-quality habitat for wildlife.	
Resource and Planning Issues	Supporting Management Decisions
Vegetation Condition ( <i>Issue 2</i> )	<ul style="list-style-type: none"> <li>Manage plant communities to achieve multiple use goals and meet or move toward the upland standard.</li> <li>Manage some special status species through special designations</li> </ul>
Desired Plant Community ( <i>Issue 2</i> )	<ul style="list-style-type: none"> <li>Identify desired plant community based on ecological sites for plant community involved when developing activity plans to meet resource objectives.</li> </ul>
Special Status Species ( <i>Issues 1, 2, 3, 4, and 5</i> )	<ul style="list-style-type: none"> <li>Designate one ACEC (Sawtooth) and identify two SMAs (San Pedro and Soaptree) to manage for protection of special status species.</li> </ul>

All BLM activities are expected to meet the New Mexico Standards and Guidelines (see Appendix B: Acts of Authority and Mandates for the BLM). These standards describe conditions needed for healthy sustainable public land and must be maintained by all users of the public land. They provide the measures of resource quality, condition, or function by which public land health will be assessed. These standards describe the conditions needed for healthy public land under three categories: upland sites, biotic communities, and riparian sites. In accordance with BLM policy, the Socorro Field Office must evaluate activities on public land against indicators developed for each standard.

For example, standards for riparian sites indicate that these areas should be in a “productive, properly functioning, and sustainable condition, within the capability of that site” and should consist of “adequate vegetation of diverse age and composition.” Indicators for these standards include factors that determine stream channel morphology and stability, streambank stability, and structural diversity of vegetation.

Guidelines are either activity-specific or use-specific. Guidelines for livestock grazing are management tools, methods, strategies, and techniques designed to maintain or achieve standards. If current grazing practices prevent an area from moving toward or reaching the standard, then the livestock guidelines will be used. When activities other than grazing are determined to be the factor in an area not moving toward or reaching the standard, then the BLM uses existing policy and manuals from its programs to implement corrective practices.

Objectives for vegetation management are established in the Socorro Field Office and are described in general terms as kinds, types, amount, or appearance of vegetation that will provide the goods, values, and services needed in a geographic area. Specific objectives for monitoring, resource objectives, and management of sensitive areas are developed at the activity plan level (e.g., allotment management plan, habitat management plan, fire management plan, etc.). The ecological site descriptions will provide the template for determining the appropriate amount, type, and distribution of vegetation reflecting the desired plant community.



The standard practices that will be employed to meet vegetation objectives are as follows:

- Maintain average utilization levels at or below 50 percent of annual production of key species.
- Construct projects such as fences, water developments, and erosion control structures.
- Implement grazing management treatments such as changes in season of use, class of livestock, or stocking rates.
- Implement vegetation treatments, including prescribed fire, fuelwood sales, or chemical or mechanical treatments.

Plant communities will be managed to achieve multiple-use goals and to meet or move towards the upland, riparian, or biotic standard (for definitions, see Appendix H: Rangeland Management). The desired plant community will be identified based on ecological sites for the plant communities that are involved when developing activity plans to meet resource objectives. The goal of defining a desired plant community is to obtain the specific plant community that is possible on a site (defined by climate, soil type, and landform) to best meet a management plan's objectives, considering all the potential values and uses for that site (Council for Agricultural Science and Technology 1996). In all cases, an ecological site must be capable of attaining the desired plant community through natural succession, management action, or both.

Generally, special status plants would be managed through (1) conducting inventory and survey and (2) acquiring access for management purposes.

One ACEC and two SMAs are designated to protect special-status plant species:

- Sawtooth Proprietary ACEC (125 acres) – manage to protect the Zuni fleabane, a federally listed species.
- San Pedro Proprietary SMA (1,201 acres) – manage to protect Fugate's Blue Star (special status plant species).
- Soaptree SMA (1,296 acres) – manage to protect the soaptree yucca ecosystem.

ACECs and SMAs are shown on Map 4, and further information on management of specially designated areas is provided in Chapter 3: Special Designations.

## VISUAL RESOURCES

Management Goal	
Maintain the Visual Resource Management (VRM) database and the quality of visual values in accordance with VRM class objectives.	
Resource and Planning Issues	Supporting Management Decisions
VRM Classes (Issue 5)	<ul style="list-style-type: none"> <li>• Manage 28,533 acres as Class I; 520,024 acres as Class II; 448,910 acres as Class III; and the remaining 509,432 acres as Class IV.</li> </ul>

The BLM has developed a comprehensive system for visual resource management (VRM) for the purpose of carrying out NEPA- and FLPMA-prescribed visual management objectives and preserving the natural scenic quality of Federal land. The BLM's policy, described in BLM Manual Section 8400 – Visual Resource Management, is that the BLM has a basic stewardship responsibility to identify and protect visual values on all BLM-managed public land.



BLM Handbook H-8410-1, Visual Resources Inventory, provides additional guidance on managing visual resources. The inventory consists of a scenic quality evaluation, a visual sensitivity level analysis, and a delineation of distance zones. Based on these three factors, BLM-administered land is placed into one of four visual resource inventory classes (Appendix E: ROS Definitions and VRM Class Objectives).

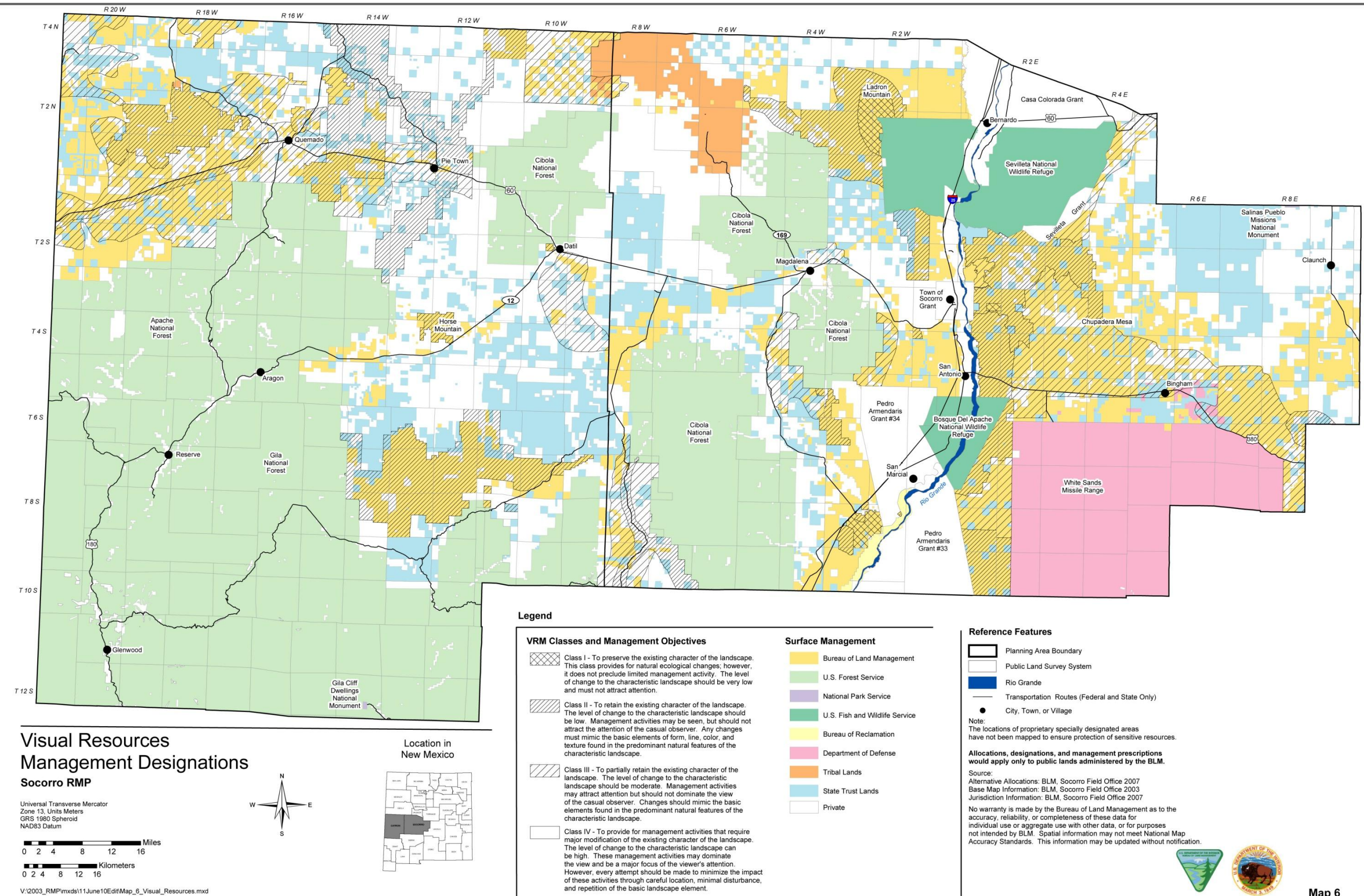
VRM classes have been applied to all land within the BLM's Planning Area. The acreage associated with the different management classes will vary, as described for each alternative. VRM classes acknowledge existing visual contrasts. More restrictive requirements will not be retroactively applied to existing projects should VRM classifications change as a result of this planning effort. New proposals will be managed to meet the intent of the VRM designations determined by this plan. Visual design considerations will be incorporated into all surface-disturbing projects regardless of size or potential impact and is a management responsibility shared by all resource management programs.

Existing VRM inventory data was used in this plan that is similar to that used in the 1989 RMP (dated between 1979 and 1988). Additional data will be collected for activity-level planning and VRM could be updated in certain areas in the future through implementation of activity plans.

Portions of the El Camino Real de Tierra Adentro National Historic Trail that are BLM-administered land within the Planning Area will continue to be managed as VRM Class I or II, as prescribed in the El Camino Real de Tierra Adentro National Historic Trail Comprehensive Management Plan and Final EIS.

Under this RMP, 28,533 acres (2 percent of the surface area managed by the BLM) would be managed as VRM Class I; 520,024 acres (36 percent) as Class II; and 448,910 acres (28 percent) as Class III. The remaining 509,432 acres (34 percent) would be managed as Class IV (see Map 6).

Map 6





## **WILD HORSES**

The Wild and Free-Roaming Horse and Burro Act of 1971 (Public Law 92-195) requires the BLM to protect and manage wild horses in the areas where they were found at the time of the Act, in a manner designed to achieve a thriving natural ecological balance in keeping with the multiple-use management concept of the public land. A wild horse or burro herd area is the public land identified as having been used by a herd as its habitat at the time of the passage of the Wild and Free-Roaming Horse and Burro Act. A herd management area (HMA) is that portion of a herd area identified for maintenance or management of wild horses or burros. The BLM manages wild horses and burros in designated herd areas as free-roaming, self-sustaining populations that contain the optimum number of animals in a thriving natural ecological balance with other multiple-use resource components. This is determined through a manageability determination based on monitoring, research, and analysis of resource use.

The Bordo Atravesado Wild Horse Herd Management Area will be managed pursuant to decisions established in the Herd Management Area Plan.

## **WILDERNESS CHARACTERISTICS**

The Wilderness Act of 1964, Section 2(c), defines wilderness as undeveloped Federal land in natural condition having outstanding opportunities or solitude or primitive and unconfined recreation. These three requirements (naturalness, opportunity for solitude, or opportunity for primitive and unconfined recreation), are wilderness characteristics.

Naturalness measures the degree to which an area has been primarily affected by the forces of nature with the imprint of man's work substantially unnoticeable. Evidence of man's work includes travel routes or trails, fences, or other landscape modifications. Naturalness is further characterized by the presence of native vegetation communities and the degree to which the area contributes to the connectivity of habitats.

Of the final two characteristics, opportunities for solitude or primitive and unconfined recreation, only one must be present (although both may be present.) Solitude is the state of being alone or remote from others. Primitive and unconfined recreation is defined by the BLM as non-motorized and non-developed types of recreation activities.

WSAs will continue to be managed in accordance with the Interim Management Policy and Guidelines for Lands Under Wilderness Review until an area is either added to the National Wilderness Preservation System by Congress or released from further consideration. The purpose of the BLM's 1995 Interim Management Policy is to protect existing wilderness values, and manage valid existing rights and grandfathered activities until final wilderness suitability determinations have been made. If an area is designated as wilderness, it will be managed in accordance with the Wilderness Act of 1964 and the BLM's Wilderness Management Regulations (43 CFR 6300 and manual 8560).

Section 603 of FLPMA authorized the BLM to classify and recommend suitable BLM land as Wilderness Study Areas. As of 1993, the BLM no longer has the authority to designate new WSAs administratively or manage additional land under the non-impairment standard prescribed by Section 603 of FLPMA.

In accordance with Instruction Memorandum 2003-275 – *Change 1 Consideration of Wilderness Characteristics in Land-Use Plans*, wilderness characteristics may be protected administratively. These administrative methods may include:

- the establishment of VRM classifications to guide the consideration of proposals that will adversely affect wilderness characteristics or guide the placement of roads, trails, and other facilities

- protective conditions of use on permits, leases, or other use authorizations
- designating land as open, closed, or limited to OHV use

If appropriate, the BLM also may designate ACECs, back country byways, watchable wildlife viewing sites, or other BLM administrative designations through the land-use planning process in order to protect wilderness values.

Lands acquired since the 1989 RMP that were identified as having wilderness characteristics are included within ACECs, and would be managed in accordance with the prescriptions outlined in Chapter 3: Special Designations. Lands acquired since the 1989 RMP were primarily acquired in land exchanges with the New Mexico State Land Department that took place prior to 2003. Any WSAs released from wilderness study would be managed in accordance with the RMP and, if adjacent to a specially-designated area such as an ACEC, would be evaluated for meeting the nomination criteria for the designation.

Wilderness characteristics on acquired lands have been identified in the table below. All of the acquired lands identified as having wilderness character are within proposed ACECs. A land exchange with the State of New Mexico resulted in the BLM's acquisition on August 20, 1996 of about 52,230 acres, including lands within and adjacent to the Sierra Ladrones, Continental Divide, Devil's Backbone, and Horse Mountain WSAs.

**Table 5: Wilderness Characteristics of Acquired Lands**

Unit Name	Unit Number	Wilderness Character Identified	No Wilderness Character Identified
Batton Canyon	020		X
Coyote Canyon	030		X
Devil's Backbone	051		X
	052	X	
	053	X	
	054		X
Horse Mountain	061	X	
	062	X	
	063	X	
Pelona Mountain	041	X	
	042	X	
	043	X	
	044	X	
	045	X	
	046	X	
	047	X	
	048	X	
	049	X	
	141	X	
	142	X	
	143	X	
	144	X	
Shaw Mountain	010	X	
Sierra Ladrones	071		X
	072	X	
	073		X
	074	X	

Unit Name	Unit Number	Wilderness Character Identified	No Wilderness Character Identified
	075	X	
	076	X	
	171	X	
	172	X	
	173	X	
	174	X	

As part of the protest resolution process, an additional review of the planning area was conducted to determine if wilderness characteristics were present. Approximately 600 acres of BLM-managed public land was found to contain wilderness characteristics because they adjoin the Chupadera Wilderness, which the U.S. Fish and Wildlife Service manages. The Socorro Proposed RMP/Final EIS did not identify the approximately 600-acre area as including wilderness characteristics. Therefore, the BLM will select Alternative C for this area, which has a higher level of protection through a Lands and Realty decision.

## WILDLAND FIRE ECOLOGY AND MANAGEMENT

BLM policy, described in Manual 9211, provides guidance for identifying resource management objectives that consider and take advantage of natural processes, particularly fire. Fire Management Plans must be completed for all burnable acres in accordance with Federal fire policy. In 2004, the BLM's New Mexico State Office prepared the Statewide Fire and Fuels Management Plan Amendment, which amends all of the BLM's New Mexico RMPs. The purpose of the amendment is to incorporate current fire management policy into RMPs, restore fires as an integral part of fire-adapted ecosystems in order to meet resource management objectives, improve the protection of human life and property through the reduction of hazardous fuels, and establish consistent methods of managing fire and fuels on public land in New Mexico and Texas. The amendment establishes objectives for fire and fuels management, delineates fire management categories (as defined in Appendix A.2 of the Resource Management Plan Amendment for Fire and Fuels Management on Public Land in New Mexico and Texas), identifies broad vegetation treatments, identifies general restrictions on fire management practices, and determines criteria for changing Fire Management Units.

Fire management strategies will be guided by the resource objectives set forth in this RMP. Overall goals for fire management are to reduce the risk to human life and property from wildland fire; reduce the risk and cost of fire suppression in areas of hazardous fuels buildup; and improve landscape health by returning fire to its natural role in the ecosystem. Fires on public lands within the Planning Area will be managed according to the Statewide Fire and Fuels Management Plan Amendment and to meet resource objectives. The amendment prescribes a range of proactive and preventative measures for the incidence of fire on public land including prescribed fire to achieve resource objectives, fire suppression, and reduction of fuels to diminish the severity of wildland fires and contain prescribed burns. Remedies for fuel build-up include manual, mechanical, and chemical means, depending on the need and circumstance (e.g., chemical treatment is preferred where other treatment would encourage expansion of noxious weeds or other invasive species). Methods to reduce density of trees and wildland fuels can include commercial thinning.

Decisions are guided by annual assignment of lands to fire management units (areas identified by geographic, social, and political characteristics with specific objectives for fire and fuels management) with specific fire management categories that dictate a management approach for each unit as outlined in the Socorro Resource Area Fire Management Plan. The Fire Management Plan is reviewed yearly and updated as needed. A site-specific fire prescription will be prepared prior to the use of prescribed fires,

and emergency stabilization treatments implemented and completed within 1 calendar year from the date of the containment of fire. Plans for rehabilitation of wildland fires must be completed within 3 years of the date of the control of fire with funding for rehabilitation prioritized using common criteria (BLM 1999). Wildland and prescribed fires are monitored according to variables described in the Monitoring and Adaptive Management Plan for the Statewide Fire and Fuels Management Plan.

## WILDLIFE, RIPARIAN HABITAT, AND SPECIAL STATUS SPECIES

Management Goal	
Ensure optimum populations of and a natural abundance and diversity of wildlife resources on public land by restoring, maintaining, and enhancing habitat conditions through management plans and actions integrated with other uses of public land through coordination with other programs, management initiatives, and habitat enhancement projects, while mitigating and/or reducing adverse impacts of other resource uses and human-wildlife interactions.	
Resource and Planning Issues	Supporting Management Decisions
Wildlife Habitat	<ul style="list-style-type: none"> <li>Enhance and protect wildlife in priority areas (including ACECs and SMAs).</li> </ul>
Bighorn Sheep (Issues 1, 2, 3, 4, and 5)	<ul style="list-style-type: none"> <li>To protect Desert Bighorn Sheep, establish a 10-mile special buffer to exclude domestic sheep and goats from occupied and historic habitat areas.</li> <li>Manage resource uses to minimize surface disturbance and unnecessary human/wildlife interactions in the Desert Bighorn Sheep corridor to reduce adverse impacts to Desert Bighorn Sheep and their habitat.</li> </ul>
Special Status Species (Issues 1, 2, 3, 4, and 5)	<ul style="list-style-type: none"> <li>Close approximately 37,254 acres of Federal mineral estate (this includes 33,779 BLM-managed surface acres) within potential Aplomado Falcon habitat to fluid mineral leasing. In these areas, also exclude mineral material disposals (except within 0.5 mile of Highway 380) and right-of-way authorizations, limit OHV use to designated routes, and petition to withdraw from location and entry.</li> <li>Close to fluid mineral leasing, exclude from mineral material disposals, and exclude from rights-of-way an additional 6,698 acres of potential Aplomado Falcon habitat on Federal mineral estate (including 6,325 acres of BLM-managed surface acres). The affected area will not include areas within one-half mile of Highway 380. Also limit OHV use to designated routes, and petition to withdraw from mineral location and entry to support the release of an experimental, nonessential population of Aplomado Falcons.</li> <li>In areas that meet criteria for Aplomado Falcon habitat, apply fluid mineral leasing stipulations and other measures to regulate surface use and occupancy. As additional data become available, these prescriptions may be revisited to assess their effectiveness in protection of this species.</li> <li>Designate three ACECs (Horse Mountain, Ladron Mountain-Devil's Backbone, and Pelona Mountain) to manage wildlife habitat and special status species.</li> </ul>

### Wildlife and Riparian Habitat

The Federal Land Policy and Management Act, along with other Federal legislation, provides guidance and direction to the BLM on the management of public land and its natural resources. Legislation directs that the BLM is responsible primarily for protecting and improving wildlife habitat on public land. However, management of resident fish and wildlife species (with the exception of migratory birds and threatened and endangered species) is by the appropriate State agencies. This requires close cooperation

between the two agencies. Memorandum of Understanding No. NMSO-41 between the BLM and New Mexico Department of Game and Fish (NMDGF) provides for the cooperative development of fish and wildlife resource plans, sets forth responsibilities for coordination, identifies issues of concern, and establishes methods of coordination.

The Socorro Field Office identifies opportunities to maintain, improve, and expand wildlife habitat on public land. This is generally guided by NMDGF big game and nongame species management plans, in a manner consistent with the principles of multiple-use management. The New Mexico Habitat Stamp Program is a process authorized under the Sikes Act (Public Law 93-452) and establishes a mechanism to fund projects and programs to achieve the conservation, rehabilitation, and ecological diversification of wildlife habitats on land administered by the U.S. Forest Service (Forest Service) and the BLM. The New Mexico Habitat Stamp Program is the primary funding source for habitat enhancement projects on public land within the Socorro Field Office. Under the BLM's multiple-use management, program activities can affect the quality and health of riparian areas that are important to fish and wildlife. Management of riparian areas has the objective of restoring and protecting these areas within the context of authorizing other land management activities.

The objective of the Socorro Field Office's wildlife management program is to facilitate the maintenance, restoration, and enhancement of all wildlife populations and habitat on public land through management plans and actions integrated with other uses of public land. In accordance with the New Mexico Standards and Guidelines, BLM actions should promote progress towards improved public land health through management that restores, protects, and enhances the resources necessary to support native wildlife species and their associated habitats in their historical proportions (as site potential allows). The Socorro Field Office will continue to implement habitat enhancement projects in cooperation with NMDGF and other partners including the Rocky Mountain Elk Foundation, National Wild Turkey Federation, Foundation for North American Wild Sheep, Quail Unlimited, and the Mule Deer Foundation. These projects include, but are not limited to, vegetative treatments (prescribed fire, mechanical and chemical treatments), watershed protection and restoration, riparian protection and restoration, wildlife transplants, wildlife watering facilities, environmental education, access management, fence modification, and wildlife project maintenance.

The Socorro Field Office will continue to develop, implement, and maintain wildlife habitat management plans (HMPs) and Coordinated RMPs for the benefit of wildlife, special status species, and riparian areas. Other management direction that will be carried forward include developing new projects to benefit wildlife or improve wildlife habitat, modifying existing projects to benefit wildlife, and continuing studies, surveys, and inventories to identify and protect crucial habitats. Policy direction includes Executive Order 13443 on Facilitation of Hunting Heritage and Wildlife Conservation.

Animal damage control on BLM-administered land is conducted by U.S. Department of Agriculture Animal Plant Health Inspection Services-Wildlife Services (APHIS-WS) in accordance with a national-level Memorandum of Understanding between APHIS-WS and the BLM. Department of the Interior policy and the annual Animal Damage Control Plan for the Socorro Field Office, prepared jointly by the APHIS-WS and the BLM, guide animal damage control activities on public land within the Planning Area. The APHIS-WS has overall responsibility for the program and supervises all control activities. The BLM has approval responsibility for the specific control actions on public land. The BLM and APHIS-WS will continue to meet annually to develop and implement a work plan for the Socorro Field Office.

The goal of the Socorro Field Office's riparian monitoring is to document the progress toward achieving and then maintaining proper functioning condition while being managed under multiple-use and adaptive management concepts (Appendix D: Monitoring). Riparian and wetland areas are considered to be functioning properly when adequate vegetation, landform, or large woody debris are present to dissipate

the stream energy associated with high water flows, thereby reducing erosion and improving water quality.

There are a number of conditions related to wildlife habitat that will be applied for approval of permits to extract resources including fluid mineral leasing. These measures, in addition to appropriate Best Management Practices (see Appendix C), will be implemented.

Approximately 26 miles of roads outside of specially-designated lands will be closed to address wildlife concerns.

### ***Special Status Species***

The Endangered Species Act requires special protection and management for federally listed threatened and endangered species, species proposed to be listed as threatened and endangered, and designated and proposed critical habitat. The act also requires the development and implementation of recovery plans for the conservation and survival of threatened and endangered species.

The BLM's special status species policy applies to management for Endangered Species Act listed, proposed, or candidate species; BLM sensitive species; and State-listed species as directed in BLM Manual 6840. In accordance with BLM Manual 6840, State-listed species should be managed to the level of protection required by State law or under BLM policy for species of concern (formerly known as candidate species) under the Endangered Species Act, whichever would provide the better opportunity for conservation. Although BLM sensitive and candidate species have no legal status or protection under the Endangered Species Act, it is BLM policy to manage such species to ensure that actions authorized, funded, or carried out by the BLM do not contribute to the need to list those species.

State laws protecting State-listed species apply to all BLM programs and actions to the extent that they are consistent with Federal authority. Applicable State legislation in the Planning Area includes the New Mexico Endangered Plant Species Act and the Wildlife Conservation Act. In accordance with these laws, lists of species that require protective measures are maintained by the State.

Federal legislation requires actions by Federal agencies to protect other protected, non-Federally-listed species and habitats. Executive Order 13186 "Responsibilities of Federal Agencies to Protect Migratory Birds," highlights the need for Federal agencies, including the BLM, to conserve migratory birds protected by the migratory bird conventions such as the Migratory Bird Treaty Act (Title 16, Parts 703-711 of the United States Code [16 USC 703-711]), the Bald and Golden Eagle Protection Acts (16 USC 668-668d), and the Fish and Wildlife Coordination Act (16 USC 661-666c). This responsibility includes the need to ensure that environmental analyses of Federal actions evaluate the effects of actions on migratory birds, with special emphasis on species of concern as identified in the periodic report "Migratory Nongame Birds of Management Concern in the United States," priority migratory bird species as documented by established plans (such as Bird Conservation Regions in the North American Bird Conservation Initiative or Partners in Flight physiographic areas), and those species listed in 50 CFR 17.11.

Federal- and State-listed species are protected by requiring site-specific evaluations and clearances and by applying more stringent management prescriptions in areas that have been specially designated to protect target species. This map is updated as new species are identified as threatened, endangered, or proposed for listing under the Endangered Species Act. When a proposed project is located within habitat that has been designated as having the potential to support a protected species, a field survey is required prior to authorization of the project. Any action that may affect federally listed species also requires consultation with the U.S. Fish and Wildlife Service (USFWS) under Section 7 of the Endangered Species Act.



Within the Chihuahuan semi-desert grasslands in the Planning Area, approximately 37,254 acres of Federal mineral estate will be excluded from fluid mineral leasing (this includes 33,779 acres of BLM-managed surface estate) for the protection of Aplomado Falcon habitat. These areas also will be excluded from mineral material disposals and right-of-way authorizations (except for areas within 0.5 mile of Highway 380), OHV use will be limited to designated routes, and the BLM will petition to withdraw the area from location and entry under the mining laws. The same management will be applied to an additional 6,698 acres of potential Aplomado Falcon habitat on Federal mineral estate (including 6,325 acres of BLM-managed surface estate) to support the release of an experimental, nonessential population of *Aplomado Falcons* under the 10j rule. Under a 10j rule, populations are treated as proposed for listing outside of National Wildlife Refuges and National Parks. Lands managed by the Socorro Field Office are identified under the 10j rule as habitat. In addition, the Armendaris Ranch, which is adjacent to BLM-administered land in the Planning Area, has been identified as a potential release site (USFWS 2005).

Areas that meet the criteria for Aplomado Falcon habitat will be managed to minimize potential impacts from surface-disturbing activities. This management will include the implementation of fluid mineral leasing stipulations and other measures to regulate surface use and occupancy (see Minerals section below) in areas that are determined to be potential Aplomado Falcon habitat. Grazing allotments within areas identified as potential Aplomado Falcon habitat will be managed for a stable or increasing trend in range condition or desired plant community. For additional information on habitat and habitat criteria, please refer to the Biological Assessment and the 2005 habitat suitability model (New Mexico Cooperative Fish and Wildlife Research Unit 2005). Monitoring of trend plots will be prioritized in areas identified for management of the Aplomado Falcon. As additional data become available, these management prescriptions may be revisited to assess their effectiveness in protection of this species.

To protect Desert Bighorn Sheep, a 10-mile-wide special buffer has been established around occupied and historic habitat areas within which domestic sheep and goats will be excluded. In addition, the Desert Bighorn Sheep travel corridor between Ladron Mountain and the Devil's Backbone Mountains will be managed to reduce impacts to bighorn habitat resulting from access and surface disturbance.

### ***Areas of Critical Environmental Concern***

Three ACECs have been designated primarily for the management of wildlife habitat, wilderness characteristics, and special status species. These include:

- Horse Mountain ACEC (5,388 acres) – manage to protect wildlife values by reducing habitat fragmentation through access management. In addition, potential habitat for a federally listed threatened species (bald eagle) and a federally listed species of concern (Peregrine Falcon) is present within the ACEC.
- Ladron Mountain-Devil's Backbone Complex ACEC (57,474 acres) – manage to enhance and protect diverse wildlife habitat, with emphasis on habitat for Desert Bighorn Sheep. This ACEC will be expanded to incorporate the former Rio Salado and San Lorenzo SMAs, and the Devil's Backbone and Polvadera Mountain areas.
- Pelona Mountain ACEC (51,091 acres) – manage to protect diverse wildlife habitat, including a federally listed threatened species (the Bald Eagle), a federally listed species of concern (Peregrine Falcon), and one of New Mexico's largest elk herds.

ACECs are shown on Map 4, and further information on management of specially designated areas is provided in Chapter 3: Special Designations.

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## CHAPTER 3: SPECIAL DESIGNATIONS

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BLM Manual 1613 and 43 CFR 1610.7-2 require that areas having potential for designation and protection as ACECs be identified and considered during the planning process. ACECs must meet relevance and importance criteria, and require special management to (1) protect the area and prevent irreparable damage to resources or the natural system or (2) protect life and promote safety in areas where natural hazards exist.

SMA's are not provided for in the regulations as a specific designation. However, H-1601-1, Land Use Planning Handbook, provides for "other BLM administrative designations" in addition to ACECs, Wild and Scenic Rivers, Back Country Byways, etc. SMA's are areas containing natural or cultural values that do not meet the ACEC or other regulatory or legislative criteria, but are areas that the BLM wishes to identify in order to protect or manage the resources associated with the area. As with the management of ACECs and other designations and subject to valid existing rights, proposed actions that potentially would degrade the values within SMA's would be avoided.

Map 4 shows all special designations that are not proprietary. A total of 197,757 acres (about 13 percent of the BLM-managed surface area in the Planning Area) will be designated as ACECs. With the exception of Cerro Pomo ACEC, ACECs do not overlap with WSAs. A total of 12,633 acres (about 1 percent of the surface area managed by the BLM in the Planning Area) will be designated as SRMA's, and an additional 85,351 acres (6 percent) will be identified as SMA's. The specific acreages and management for each area is summarized below.

**NOTE:** Fluid mineral leasing stipulations are described in detail in the Fluid Mineral Lease Stipulations section of Appendix I: Minerals Management. Cultural Resource Use Categories are described in BLM Manual 8110.42; brief synopses of Categories A and D can be found at the end of this chapter.

### AREAS OF CRITICAL ENVIRONMENTAL CONCERN

#### ***Cerro Pomo ACEC***

Cerro Pomo ACEC covers 28, 248 acres, including 25,200 acres that overlap with WSAs. The following management decisions apply specifically to Cerro Pomo ACEC:

1. Limit motor vehicle use to designated routes.
2. Exclude the authorization of right-of-way within the ACEC.
3. Allow mineral material disposals within the ACEC contingent upon site-specific assessment of resources and mitigation as necessary (except in the areas that overlap WSAs).
4. Pursue acquisition of nonpublic land within and contiguous to the ACEC.
5. Apply fluid mineral leasing stipulation S-VRM-II<sup>2</sup> within the ACEC.
6. Research, study, and protect cultural sites and apply Cultural Resource Use Category A: Scientific Use<sup>3</sup>.

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<sup>2</sup> Fluid mineral leasing stipulations are described in detail in the Fluid Mineral Lease Stipulations section of Appendix I.

<sup>3</sup> Cultural Resource Allocations are described in BLM Manual 8110.42; brief synopses of each allocations type can be found at the end of this chapter.

7. Permit commercial woodcutting only to support BLM-authorized projects to meet resource management objectives (except in those areas that overlap WSAs).
8. Provide opportunities for heritage tourism with appropriate mitigation measures as determined in coordination with SHPO and Tribes.

### ***Horse Mountain ACEC***

The following management decisions apply to Horse Mountain ACEC, which covers 5,388 acres:

1. Limit motor vehicle use to designated routes within the ACEC.
2. Exclude the authorization of right-of-way and leases within the ACEC.
3. Pursue acquisition of nonpublic land within and contiguous to the ACEC.
4. Apply fluid mineral leasing stipulation S-NSO-W within the ACEC.
5. Allow mineral material disposals within the ACEC contingent upon site-specific assessment of resources and mitigation as necessary.
6. Permit commercial woodcutting only to support BLM-authorized projects to meet resource management objectives.
7. Exclude grazing on land that have not been allotted.

### ***Ladron Mountain – Devil’s Backbone Complex ACEC***

The following management decisions apply to the Ladron Mountain – Devil’s Backbone Complex ACEC, which covers 57,474 acres:

1. Limit motor vehicle use to designated routes within the ACEC.
2. Exclude the authorization of right-of-way and leases within the ACEC. Avoid the authorization of right-of-way and leases within the Desert Bighorn Sheep Corridor.
3. Apply fluid mineral leasing stipulation S-NSO-W within the ACEC.
4. Allow mineral material disposals within the ACEC contingent upon site-specific assessment of resources and mitigation as necessary.
5. Pursue acquisition of nonpublic land within and contiguous to the ACEC.
6. Exclude grazing on land that has not been allotted.
7. Maintain and/or implement closure to domestic sheep and goats within 10 miles of bighorn habitat.
8. Maintain viable populations of Desert Bighorn Sheep through activities such as habitat improvements and coordination with NMDGF on Desert Bighorn Sheep transplants and reintroductions.
9. Withdraw from location and entry for locatable minerals under the mining laws all land with medium and high mineral potential (23,567 acres) for the protection of Desert Bighorn Sheep within the ACEC (see Maps 3-9, 3-10, and 3-11).
10. Encourage inventory and research of cultural resource sites and apply Cultural Resource Use Category A: Scientific Use. to cultural resource sites.
11. Permit commercial woodcutting only to support BLM-authorized projects to meet resource management objectives.

12. Exclude the San Lorenzo area from vegetative material sales, with the exception of exotic species. Allow vegetative sales elsewhere within the ACEC contingent upon site-specific assessment of resources and mitigation as necessary.

### ***Mockingbird Gap Proprietary ACEC***

The following management decisions apply to Mockingbird Gap Proprietary ACEC, which covers 8,685 acres:

1. Limit motor vehicle use to designated routes.
2. Avoid the authorization of right-of-way and leases.
3. Allow mineral material disposals contingent upon site-specific assessment of resources and mitigation as necessary.
4. Apply fluid mineral leasing stipulations S-CSU-C3 and Lease Notice NM-5.
5. Apply Cultural Resource Use Category A: Scientific Use. to cultural sites.
6. Research, study, and protect cultural resource sites.

### ***Pelona Mountain ACEC***

The following management decisions apply to Pelona Mountain ACEC, which covers 51,091 acres:

1. Limit motor vehicle use to designated routes within the ACEC.
2. Exclude authorization of right-of-way and leases within the ACEC.
3. Apply fluid mineral leasing stipulations S-CSU-W1 and S-VRM-II within the ACEC.
4. Pursue acquisition of nonpublic land within and contiguous to the ACEC.
5. Pursue legal access for the ACEC.
6. Allow mineral material disposals within the ACEC contingent upon site-specific assessment of resources and mitigation as necessary.
7. Permit commercial woodcutting only to support BLM-authorized projects to meet resource management objectives.
8. Apply Cultural Resource Use Category A: Scientific Use to Bat Cave Cultural Site.

### ***Sawtooth Proprietary ACEC***

The following management decisions apply to Sawtooth Proprietary ACEC, which covers 125 acres:

1. Limit motor vehicle use to designated routes.
2. Exclude the authorization of right-of-way and leases.
3. Apply fluid mineral leasing stipulation S-NSO-T&E.
4. Maintain withdrawal from locatable mineral entry.
5. Acquire legal access.
6. Exclude from vegetative material sales.
7. Exclude mineral material disposals.
8. Develop an allotment management plan.

### ***Zuni Salt Lake Proprietary ACEC***

The following management decisions apply to Zuni Salt Lake Proprietary ACEC, which covers 46,746 acres:

1. Limit motor vehicle use to designated routes. Avoid designations that will impact the values of Zuni Salt Lake.
2. Avoid or mitigate actions that will impact the cultural resources (including TCPs) through consultation with SHPO and the Zuni Heritage and Historic Preservation Office. Avoid or mitigate actions that will impact natural resources.
3. Restrict actions that alter, in a way that degrades the uses and values of the Zuni Salt Lake, the quality and quantity of water resources that supply the lake.
4. The ACEC area is closed to fluid and solid mineral leasing.
5. Withdraw the Zuni Salt Lake Protection Zone, an area of 4,839 federal surface acres that surround the salt lake, from location and entry under the mining laws.
6. Exclude the authorization of right-of-way and leases within the ACEC except for #7 below.
7. Allow geophysical, geologic, or hydrologic and related operations only for research or monitoring to understand and protect the Zuni Salt Lake or for regional scientific study.
8. Exclude mineral material disposals within the Zuni Salt Lake Protection Zone (4,839 acres that surround the Salt Lake). Allow mineral material disposals in the remainder of the ACEC contingent upon site-specific assessment of resources and mitigation as necessary.
9. The BLM will consult with the Governor of Zuni and other tribes based on agreed upon provisions of a joint memorandum of understanding for any proposed actions within the ACEC, or outside the ACEC that may impact the Zuni Salt Lake, to be initiated by the BLM within six months of the signing of the Record of Decision for the RMP.
10. Acquire nonpublic land within and contiguous to the ACEC.
11. Exclude woodcutting.

### **SPECIAL MANAGEMENT AREAS**

#### ***Continental Divide National Scenic Trail SMA***

The following management decisions apply to the Continental Divide National Scenic Trail SMA, which covers 59,434 acres:

1. Limit motor vehicle use to designated routes on the northern portion of the trail. On the southern portion of the trail, close to motor vehicle use within the Continental Divide WSA, and limit motor vehicle use to designated routes elsewhere in the SMA.
2. Exclude the authorization of right-of-way and leases within the WSA. Avoid the authorization of right-of-way and leases within the SMA and outside the WSA.
3. Outside of the WSA, permit commercial woodcutting within only to support BLM-authorized projects to meet resource management objectives.
4. Allow mineral material disposals contingent upon site-specific assessment of resources and mitigation as necessary.
5. Exclude mineral leasing in the Continental Divide WSA. Apply fluid mineral leasing stipulations S-VRM-II and Lease Notice NM-6 within the SMA and outside the WSA.

6. Pursue acquisition of legal access.
7. Retain all land within the corridors identified for the Continental Divide National Scenic Trail in the SMA.
8. Management prescriptions listed to CDNST herein apply only to BLM-managed land.

### ***Fort Craig SMA***

The following management decisions apply to the Fort Craig SMA, which covers 149 acres:

1. Limit motor vehicle use to designated routes.
2. Acquire all minerals. When acquired, petition for mineral withdrawal from location and entry under the mining laws.
3. Exclude grazing on land that has not been allotted.
4. Exclude fluid mineral leasing.
5. Avoid authorization of right-of-way and leases.
6. Exclude mineral material disposals.
7. Develop visitor facilities and public interpretation values.
8. Apply Cultural Resource Use Category D. Public Use.

### ***Newton Site Proprietary SMA***

The following management decisions apply to Newton Site Proprietary SMA, which covers 6,789 acres:

1. Limit motor vehicle use to designated routes.
2. Avoid the authorization of right-of-way and leases.
3. Apply fluid mineral leasing stipulation S-NSO-C.
4. Allow mineral material disposals contingent upon site-specific assessment of resources and mitigation as necessary.
5. Provide opportunity for research.
6. Apply Cultural Resource Use Category A: Scientific Use. to Newton Site and associated complex of sites.
7. Acquire administrative access.

### ***Penjeacu SMA (formerly Teypama)***

The following management decisions apply to Penjeacu SMA, which covers 11 acres:

1. Limit vehicle use to designated routes.
2. Avoid the authorization of right-of-way and leases.
3. Exclude mineral material disposals.
4. Maintain non-grazing status.
5. Apply fluid mineral leasing stipulation S-NSO-C.
6. Conduct cadastral survey to determine boundaries.
7. Pursue acquisition of non-Federal portion of the cultural site.
8. Apply Cultural Resource Use Category D: Public Use.

9. Research, study, and protect the pueblo.

### ***Playa Pueblos Proprietary SMA***

The following management decisions apply to Playa Pueblos Proprietary SMA, which covers 203 acres:

1. Limit motor vehicle use to designated routes.
2. Avoid the authorization of right-of-way and leases.
3. Pursue the acquisition of nonpublic land.
4. Allow mineral material disposals contingent upon site-specific assessment of resources and mitigation as necessary.
5. Apply fluid mineral leasing stipulations S-NSO-C and Lease Notice NM-5.
6. Exclude livestock grazing by fencing.
7. Apply Cultural Resource Use Category A: Scientific Use to Playa Pueblos.
8. Include in thematic Tompiro National Register Nomination.

### ***Puertecito SMA***

The following management decisions apply to Puertecito SMA, which covers 7,156 acres:

1. Limit motor vehicle use to designated routes.
2. Avoid the authorizations of right-of-way and leases.
3. Apply fluid mineral leasing stipulations S-CSU-C1 and S-CSU-S.
4. Apply Cultural Resource Use Category A: Scientific Use to cultural sites within Puertecito SMA.
5. Research, study, and protect cultural sites within the SMA.

### ***San Pedro Proprietary SMA***

The following management decisions apply to San Pedro Proprietary SMA, which covers 1,201 acres:

1. Limit motor vehicle use to designated routes.
2. Avoid the authorization of right-of-way and leases.
3. Apply fluid mineral leasing stipulations S-NSO-T&E and Lease Notice NM-5.
4. Exclude mineral material disposals.
5. Exclude from vegetative material sales.

### ***Stallion SMA***

The following management decisions apply to Stallion SMA, which covers 10,883 acres:

1. Close to motor vehicle use within the WSAs (Sierra de Las Cañas and Presilla). Limit motor vehicle use to designated routes elsewhere within the SMA.
2. Exclude the authorization of right-of-way and leases within Sierra de Las Cañas and Presilla WSA. Avoid the authorization of right-of-way and leases within the SMA and outside the WSA.
3. Exclude mineral leasing within the WSA.
4. Apply fluid mineral leasing stipulations S-CSU-S, S-CSU-K, and Lease Notice NM-5 within the SMA and outside the WSA.

### ***Soaptree SMA***

The following management decisions apply to Soaptree SMA, which covers 1,296 acres:

1. Limit motor vehicle use to designated routes.
2. Avoid authorization of right-of-way and leases.
3. Apply fluid mineral leasing stipulations S-VRM-II. and S-CSU-V.
4. Exclude from vegetative material sales.
5. Allow mineral material disposals contingent upon site-specific assessment of resources and mitigation as necessary.

## **SPECIAL RECREATION MANAGEMENT AREAS**

### ***The Box SRMA***

. The following management decisions apply to The Box SRMA, which covers 1,107 acres:

1. Limit motor vehicle use to designated routes.
2. Exclude the authorizations of right-of-way and leases.
3. Maintain the existing 40-acre withdrawal from location and entry under the mining laws, and withdraw an additional 320 acres.
4. Apply fluid mineral leasing stipulation S-VRM-II
5. Allow mineral material disposals contingent upon site-specific assessment of resources and mitigation as necessary.
6. Inventory for cultural resources.
7. Implement actions to protect significant at-risk cultural resources from other conflicting uses.
8. Maintain closure to shooting of weapons within SRMA.
9. Pursue renewal of the existing road easement across private land, and continue to maintain road.

### ***Datil Well SRMA***

The following management decisions apply to Datil Well SRMA, which covers 669 acres:

1. Limit motor vehicle use to designated routes.
2. Avoid the authorization of right-of-way and leases.
3. Within the SRMA, permit commercial woodcutting only to support BLM-authorized projects to meet resource management objectives.
4. Apply fluid mineral leasing stipulation S-VRM-II.
5. Maintain 80-acre withdrawal from location and entry under the mining laws.
6. Exclude mineral material disposals.
7. Maintain closure to weapons shooting within SRMA.
8. Apply Cultural Resource Use Category D: Public Use to Datil Well and related Cultural Resource sites.
9. Pursue acquisition of private land contiguous to the SRMA.



### ***Gordy's Hill SRMA***

The following management decisions apply to Gordy's Hill SRMA, which covers 7,647 acres:

1. Limit motor vehicle use to designated routes.
2. Prepare Recreation Area Management Plan.
3. Exclude target shooting within 0.5 mile of designated trails.
4. Avoid authorization of right-of-ways and leases.

### ***Quebradas Back Country Byway SRMA***

The following management decisions apply to the Quebradas Back Country Byway SRMA, which covers 3,130 acres:

1. Maintain the byway open to motor vehicle use. Close the buffer area surrounding the byway (i.e., 0.25 mile from centerline in each direction, for a buffer area that is 0.5 mile wide overall) to OHV within the WSA boundaries, and limit OHV use to designated routes elsewhere in the buffer zone.
2. Provide for interpretation and signing.
3. Exclude the authorization of right-of-way and leases within the WSA. Avoid the authorizations of right-of-way and leases in the remainder of the buffer area.
4. Allow mineral material disposals within the buffer area contingent upon site-specific assessment of resources and mitigation as necessary.
5. Exclude mineral leasing within the Presilla and Sierra de Las Cañas WSAs. Apply fluid mineral leasing stipulation S-VRM-II within the buffer area and outside the WSAs.
6. Exclude from vegetative material sales within the buffer area.
7. Maintain existing Socorro County Road Maintenance Agreement.

### ***Socorro Nature Area SRMA***

The following management decisions apply to the Socorro Nature Area SRMA, which covers 80 acres:

1. Complete a comprehensive management plan.
2. Limit motor vehicle use to designated routes.
3. Avoid the authorization of right-of-way and leases.
4. Apply fluid mineral leasing stipulation S-NSO-R.
5. Exclude mineral material disposals.
6. Exclude grazing on land that has not been allotted.

## **SUMMARY OF CULTURAL RESOURCE USE CATEGORIES**

The following information is summarized from BLM Manual 8110.42.

- A:** ***Scientific Use:*** This category applies to any cultural property determined to be available for consideration as the subject of scientific or historical study at the present time, using currently available research techniques....Properties in this category need not be conserved in the face of a research or data recovery (mitigation) proposal that would make adequate and appropriate use of the property's research importance.

**D:**     **Public Use:** This category may be applied to any cultural property found to be appropriate for use as an interpretive exhibit in place, or for related educational and recreational uses by members of the general public. The category may also be applied to buildings suitable for continued use or adaptive use, for example as staff housing or administrative facilities at a visitor contact or interpretive site, or as shelter along a cross-country ski trail.

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## CHAPTER 4: PLAN IMPLEMENTATION, MONITORING, AND EVALUATION

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This chapter outlines the strategy for implementing, monitoring, and amending this RMP, including opportunities for future involvement by stakeholders in these activities.

### IMPLEMENTATION OF THE RMP

Management decisions identified in Chapter 2 are effective immediately upon approval of the Record of Decision. All future resource management authorizations must conform with or, at a minimum, not conflict with, this RMP.

Further implementation-level decision making may include the preparation of activity-level or project-specific plans as well as administrative decisions that do not require plan approval. The following priorities for implementation plans are identified:

- *Travel management planning* – Priority areas for completing travel management plans are as follows: (1) Gordy’s Hill, (2) ACECs, (3) SRMAs, (4) SMAs, and (5) all other BLM land. They will be completed within 5 years of the Record of Decision.
- *Activity plans* – for ACECs, SRMAs, and SMAs (in that order of priority).
- *Management plan for significant caves and karst resources* – Cave and karst resources will be delineated and mapped and a management plan will be prepared within 2 years of the Record of Decision.

All due dates are contingent upon the availability of funding and/or staff resources. Other key priorities in implementing the plan include:

- Establishing a memorandum of understanding with the Zuni Tribe with regard to future management of the Zuni Salt Lake ACEC.
- Design procedures for and initiate monitoring programs and prepare first annual implementation monitoring report during the second year of plan implementation (See Appendix D: Monitoring and discussion below.)

### PUBLIC INVOLVEMENT IN THE IMPLEMENTATION OF THE RMP

It is expected that robust public and stakeholder involvement efforts will accompany implementation planning. These outreach efforts will be designed for each specific activity or travel management planning process to ensure that the approach is targeted to each unique set of stakeholders and issues.

The monitoring programs for specific resources, resource uses, or programs may benefit from input from stakeholders and the public. Reporting on annual implementation monitoring will be available for public review (please see *Monitoring* discussion, below).

### MONITORING

The BLM’s planning regulations (43 CFR 1610.4-9) call for the monitoring of RMPs on a continual basis with a formal evaluation to be completed at 5-year intervals. The Socorro RMP will be monitored on a continual basis to (1) ensure that decisions described in this RMP are being implemented, (2) allow up-to-date evaluations, and (3) respond to changing situations.

A detailed monitoring and evaluation plan is provided as Appendix D: Monitoring. All plan monitoring will assess the following:

- Whether management actions are resulting in satisfactory progress toward management goals
- Whether actions are consistent with current policy
- Whether original assumptions were correctly applied and impacts correctly predicted
- Whether mitigation measures are satisfactory
- Whether the RMP is consistent with the plans and policies of state and local government, other Federal agencies, and American Indian Tribes
- Whether new data are available that will require alteration of the plan

Monitoring is an essential component of natural resource management because it provides information on the relative success of management strategies. Land use plan monitoring is the process of (1) tracking the implementation of land use planning decisions (implementation monitoring) and (2) collecting data/information necessary to evaluate the effectiveness of land use planning decisions (effectiveness monitoring).

### ***Implementation Monitoring***

Implementation monitoring is the process of tracking and documenting the implementation (or the progress toward implementation) of land use decisions. This will be done annually throughout the life of the RMP and will be documented in the form of a tracking log or report. The report will be available for public review (H-1601-1, Land Use Planning Handbook, BLM 2005).

The monitoring plan will be evaluated periodically to ascertain that the monitoring questions and standards are still relevant, and will be adjusted as appropriate. Some monitoring items may be discontinued and others may be added as knowledge and issues change with implementation.

RMP monitoring will be conducted at multiple levels and scales and in the most cost-effective manner. Monitoring will be conducted in a manner that allows localized information to be compiled and considered in a broader regional context, thereby address both local and regional issues. At project level, monitoring will examine how well specific management direction has been applied on the ground and how effectively it produces expected results. Monitoring at broader levels will measure how successfully projects and other activities have achieved the objectives for those management areas.

Monitoring will be coordinated with other appropriate agencies and organizations in order to enhance efficiency and usefulness of the results across a variety of administrative units and provinces. The approach will build on past and present monitoring work.

Monitoring results will be reported in an annual program summary (such as a Socorro Field Office Update), which will be published on the field office web site, the second year following initial implementation of this RMP. The annual program summary will track and assess the process of RMP implementation, state the findings made through monitoring, and serve as a report to the public.

### ***Effectiveness Monitoring***

Effectiveness monitoring is the process of collecting data and information for specific resources or programs to determine whether or not desired outcomes (expressed as goals and objectives in the land use plan) are being met (or progress is being made toward meeting them) as the allowable uses and management actions are implemented. A brief discussion of the effectiveness monitoring that will be carried out for each resource or program to determine if the actions described in the RMP are meeting or moving toward management goals is provided in Appendix D: Monitoring.

## PLAN EVALUATION AND ADAPTIVE MANAGEMENT

In addition to monitoring, the BLM's planning regulations (43 CFR 1610.4-9) call for a formal evaluation to be completed at 5-year intervals. Management actions or projects arising either internally or externally will be evaluated to determine conformance with the RMP. If the project is in conformance, it could proceed contingent upon environmental analysis or, if not in conformance, the project would be abandoned or the RMP amended to allow the project or action.

### ***Plan Evaluation***

Land use plans are evaluated to determine if (1) decisions remain relevant to current issues, (2) decisions are effective in achieving (or making progress toward achieving) management goals, (3) any decisions need to be revised, (4) any decisions need to be dropped from further consideration, and (5) any areas require new decisions. The Socorro RMP will be formally evaluated at least every 5 years. These evaluations may identify resource need and means for correcting deficiencies and addressing issues through plan maintenance, amendments, or new starts. Evaluations should also identify where new and emerging resource issues and other values have surfaced.

The process for completing plan evaluations is outlined in H-1601-1 - *Land Use Planning Handbook*.

### ***Adaptive Management***

Adaptive management is a procedure in which decisions and changes in management are made as part of an ongoing process in response to changing conditions. It is a continuous process of planning, implementing, monitoring, evaluating, and incorporating new information into strategies to meet the goals and objectives of the management described in the RMP. A continuous feedback loop allows for mid-course corrections in management to meet goals and objectives. It also provides a model for adjusting goals and objectives as new information develops and public desires change.

The complex interrelationships of physical, biological, and social components of the ecosystem and how they react to land management practices are often not fully understood when a land use management plan is developed. To be successful, plans must have the flexibility to adapt and respond to new knowledge or conditions.

The following briefly describes the four parts of adaptive management:

- ***Planning/Decision*** – Plan development or revision is the process leading to decision making. It starts with issue identification and goal development. The next step is to gather information necessary to develop alternatives for management direction that address the issues and goals. The final stage is to develop alternative management strategies to address issues and meet the management goals, analyze the consequences of the alternatives, and choose a Proposed Alternative for implementation.
- ***Implementation*** – The process of putting a plan or decision into effect. Implementation includes short- and long-term actions. It is assumed that all management direction will be implemented within 10 years. Standards are defined addressing how to achieve management goals; standards can include requirements to refrain from taking action in certain situations.
- ***Monitoring*** – Detects changes so management activities can be modified to achieve management goals. Monitoring data provide information on the condition and trend of the ecosystem. Monitoring data would be collected to determine if plan objectives are being met. This is discussed further in Appendix D: Monitoring.
- ***Evaluation/Assessment*** – The point where plans and monitoring data are reviewed. This phase of adaptive management is used to judge the success of existing plans in meeting goals and

objectives, and makes recommendations for corrections. The understanding gained through evaluations is critical to managing sustainable, healthy, and productive ecosystems. Evaluations are a key component of the adaptive management process. An evaluation may lead to a change in management actions.

Monitoring is integral to adaptive management. Monitoring results will provide managers with the information to determine whether an objective has been met, and whether to continue or modify the management direction. Findings obtained through monitoring, together with research and other new data, will provide a basis for adaptive management changes to the RMP. The processes of monitoring and adaptive management share the goal of improving effectiveness and permitting dynamic response to increased knowledge and a changing landscape.

As part of the Evaluation/Assessment section above and upon completion of periodic evaluations, the Socorro Field Office Manager will determine what, if any, changes are necessary to ensure that management actions are consistent with management goals. It is possible that a plan amendment or revision may be initiated because of a need to consider monitoring findings, new data, new or revised policy, or a proposed action that may result in a change in the terms, conditions, or decisions of the approved RMP.

## **AMENDING THE PLAN**

If monitoring and evaluation indicate that modifying an RMP is necessary, the RMP may be changed through the amendment process. Monitoring and evaluation findings, new data, and new or revised policies will be evaluated to determine if there is a need for an amendment. Any changes in circumstances or conditions which affect the scope, terms, or conditions of the RMP may warrant an amendment. Generally, an RMP amendment is site-specific or involves only one planning issue. An RMP revision, if necessary, will involve the preparation of a new RMP for the entire Planning Area.

Potential minor changes, refinements, or clarifications to the RMP may take the form of maintenance actions. Maintenance actions incorporate minor data changes and are usually limited to minor refinements and documentation such as correction of acreages or other numbers, clarifying language, refining known habitat of special status species addressed in the RMP and similar refinements (H-1601-1 Land Use Planning Handbook, BLM 2005). RMP maintenance would not result in expansion of the scope of resource uses or restrictions or change the terms, conditions and decisions of approved RMP. Maintenance actions are not considered plan amendments and do not require a formal public involvement and interagency coordination process.

## GLOSSARY OF TERMS

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**Acre-foot:** The volume (as of irrigation water) that would cover 1 acre to a depth of 1 foot (43,560 cubic feet).

**Agency:** Any Federal, State, or county government organization with jurisdictional responsibilities.

**Air quality:** A measure of the health-related and visual characteristics of the air, often derived from quantitative measurements of the concentrations of specific injurious or contaminating substances.

**Air quality standard:** Levels of air pollutants prescribed by regulations that may not be exceeded during a specified time in a defined area.

**Allocated uses:** Bureau of Land Management allocates cultural resources to one of five categories including (1) scientific use, (2) conservation for future use, (3) traditional use, (4) public use, or (5) experimental use. If cultural resources are evaluated as lacking significant values, they are categorized as discharged from management.

**Allotment (range):** A designated area of land available for livestock grazing upon which a specified number and kind of livestock may be grazed under management of an authorized agency. An allotment generally consists of Federal rangelands, but may include intermingled parcels of private, State, or Federal lands. The BLM and the Forest Service stipulate the number of livestock and season of use for each allotment.

**Allotment Management Plan (AMP):** A written program of livestock grazing management including supportive measures, if required. An AMP is designed to attain specific management goals in a grazing allotment and is prepared cooperatively with the permittee(s) or lessee(s).

**All-Terrain Vehicle (ATV):** A small motor vehicle with wheels or tractor treads often used for cross-country travel including traveling over rough ground, snow, or ice. For the purposes of this document, an all-terrain vehicle is defined as a motor vehicle that: (a) is designed primarily for recreational non-highway all-terrain travel, (b) is fifty or fewer inches in width, (c) has an unladen weight of eight hundred pounds or less, (d) travels on three or more low pressure tires, and (e) has a seat designed to be straddled by the operator, and handlebars for steering control. An ATV is a type of off-highway vehicle.

**Ambient (air):** The surrounding atmospheric conditions to which the general public has access.

**American Indian tribe (or tribe):** Any American Indian group in the conterminous United States that the Secretary of the Interior recognizes as possessing tribal status (listed periodically in the Federal Register).

**Animal unit:** A unit of measure for rangeland livestock equivalent to one mature cow or five sheep or five goats, all over 6 months of age. An animal unit is based on an average daily forage consumption of 26 pounds of dry matter per day.

**Animal Unit Month (AUM):** The amount of forage needed to sustain one cow, five sheep, or five goats, for a month. A full AUM's fee is charged for each month of grazing by adult animals if the grazing animal (1) is weaned, (2) is 6 months old or older when entering public land, or (3) will become 12 months old during the period of use. For fee purposes, an AUM is the amount of forage used by five weaned or adult sheep or goats or one cow, bull, steer, heifer, horse, or mule. The term AUM is

commonly used in three ways: (1) stocking rate as X acres per AUM, (b) forage allocation as in X AUM's in allotment A, and (3) utilization as in X AUMs consumed from Unit B.

**Appropriate Management Level (AML):** The median number of adult wild horses or burros determined through the BLM's planning process to be consistent with the objective of achieving and maintaining a thriving ecological balance and multiple-use relationship in a particular herd area.

**Aquifer:** A water-bearing rock unit (unconsolidated or bedrock) that will yield water in a usable quantity to a well or spring.

**Archaeology:** The scientific study of the life and culture of past, especially ancient, peoples, by excavation of ancient cities, relics, artifacts, etc.

**Archaeological site:** A discrete location that provides physical evidence of past human use.

**Area of Critical Environmental Concern (ACEC):** An area of public lands designated by Bureau of Land Management for special management attention to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources, or other natural systems or processes, or to protect life/provide safety from natural hazards. Areas designated as ACECs have met criteria for importance and relevance that are outlined in 43 CFR 1610.7-2(b).

**Artifact:** A human-made object.

**Attainment area:** An area that meets a Federal primary or secondary ambient air quality standard for the pollutant.

**Authorized Officer:** The BLM employee to whom the authority and responsibility to manage a specific activity has been delegated. Within the Socorro Field Office, the Field Manager is the Authorized Officer of highest authority and may delegate certain responsibilities to other Socorro Field Office employees.

**Avoidance area:** An environmentally sensitive area where rights-of-way may be granted only when no feasible alternative route is available.

**Back Country Byway:** A secondary or country road that is rarely traveled. A designated Back Country Byway is associated with scenic, historic, or recreational opportunities.

**Basin:** A depressed area having no surface outlet (topographic basin); a physiographic feature or subsurface structure that is capable of collecting, storing, or discharging water by reason of its shape and the characteristics of its confining material (water); a depression in the earth's surface, the lowest part often filled by a lake or pond (lake basin); a part of a river or canal widened (drainage, river, stream basin).

**Best Management Practices (BMPs):** A suite of techniques that guide, or may be applied to, management actions to aid in achieving desired outcomes and help to protect the environmental resources by avoiding or minimizing the impacts of an action. BMPs are often developed in conjunction with land use plans, but they are not considered a land use plan decision unless the land use plan specifies that they are mandatory. They may be updated or modified without a plan amendment if they are not mandatory.

**Bureau of Land Management (BLM):** An agency of the U.S. Department of the Interior responsible for managing most Federal government subsurface minerals. It has surface management responsibility for Federal lands designated under the Federal Land Policy and Management Act of 1976.



**Cave:** The Federal Cave Resources Protection Act (FCRPA) of 1988 defines a cave as any natural occurring void, cavity, recess, or system of interconnected passages which occurs beneath the surface of the earth or within a cliff or ledge (including any cave resource therein, but not including any vug, mine, tunnel, aqueduct, or other manmade excavation), and which is large enough to permit an individual to enter, whether or not the entrance is naturally formed or manmade.

**Chemical treatment:** Involves the use of herbicides to target species to reduce their competitive effect on more desirable species as well as to reduce fuel loadings and wildfire risk.

**Clean Air Act of 1990:** Federal legislation governing air pollution. The Clean Air Act established National Ambient Air Quality Standards for carbon monoxide, nitrogen dioxide, ozone, particulate matter, sulfur dioxide, and lead. Prevention of Significant Deterioration classifications define the allowable increased levels of air quality deterioration above legally established levels. They include the following:

Class I – minimal additional deterioration in air quality (certain national parks and wilderness areas)

Class II – moderate additional deterioration in air quality (most lands)

Class III – greater deterioration for planned maximum growth (industrial areas)

**Clean Water Act (CWA) of 1987:** Federal legislation governing water quality. The CWA refers to a series of Federal laws and regulations that attempt to restore the beneficial uses of surface waters of the United States (also referred to as “waters of the U.S.”). The CWA regulates such programs as the National Pollutant Discharge Elimination System, a permit-based set of regulations that control the discharge of pollution to U.S. waterways from an individual point (for example, the end of a pipe) and the discharge of concentrated storm water from highways, cities, and other built environments. The CWA also regulates the placing of fill in streams and washes for the construction of road crossings, pipelines, and power lines. The U.S. Environmental Protection Agency and the U.S. Army Corps of Engineers, which in some cases has extended responsibilities to the individual States, regulate these programs.

**Closed:** Generally denotes that an area is not available for a particular use or uses; refer to specific definitions found in law, regulations, or policy guidance for application to individual programs. For example, 43 CFR 8340.0-5 sets forth the specific meaning of “closed” as it relates to off-highway vehicle use, and 43 CFR 8364 defines “closed” as it relates to closure and restriction orders.

**Community (natural community):** The living part of an ecosystem. Communities change with succession, thereby forming distinctive ecological units both in time and space. The plant community and the animal community together form the biotic community. Size is not implied (i.e., organisms associated with a decaying log or with an entire forest each represent communities).

**Cross-country travel:** Wheeled, motorized travel by any vehicle (recreational or other), off of roads and trails.

**Cubic foot/feet per second (cfs):** As a rate of stream flow, a cubic foot of water passing a reference section in one second of time. One cfs flowing for 24 hours will yield 7.983 acre-feet of water.

**Cultural resources:** Any definite location of past human activity, occupation, or use, identifiable through inventory, historical documentation, or oral evidence. Cultural resources include archaeological, historic, or architectural sites, structures, places, objects, and artifacts.

**Cumulative effect (or impact):** Cumulative impacts result from the accumulation of the individually minor impacts of past, present, and reasonably foreseeable future actions within the human environment.

These impacts may be significant when considered collectively. It is therefore necessary to consider the incremental impact of the proposed action (and its alternatives) in conjunction with other, unrelated actions occurring within the same geographic area as the proposed action.

**Developed recreation:** Recreation that requires facilities that result in further concentrated use of the area. For example, off-road vehicles require parking lots and trails; campgrounds require roads, picnic tables, and toilet facilities.

**Direct effect (or impact):** Effects that occur at the location of the proposed action and at that specific point in time.

**Dispersed recreation:** Recreation that does not occur in a developed recreation site, such as hunting, backpacking, and scenic driving.

**Distance zones:** A subdivision of the landscape as viewed from an observer position. The subdivision (zones) includes foreground-middleground, background, and seldom seen.

- Foreground-middleground zone – The area that can be seen from each travel route for a distance of 3 to 5 miles where management activities might be viewed in detail. The outer boundary of this distance zone is defined as the point where the texture and form of individual plants are no longer apparent in the landscape.
- Background zone – The remaining area that can be seen from each travel route to approximately 15 miles. In order to be included within the distance zone, vegetation should be visible at least as patterns of light and dark.
- Seldom-seen zone – Areas that are not visible within the foreground-middleground and background zones, and areas beyond the background zones.

**Easement:** A right afforded a person, agency, or organization to make limited use of another's real property for access or other purposes.

**Ecosystem:** Any area or volume in which there is an exchange of matter and energy between living and nonliving parts; that is, the biotic community together with soil, air, water, and sunlight form an ecosystem. Ecosystems are the best units for studying the flow of energy and matter.

**Edge effect:** Edge effects occur when natural habitats are interrupted by development or other human-induced disturbances, including roads, structures, and trampling or vehicle tracks. Edge effects affect wildlife species in very different ways, depending on the life history of the species, and cause behavioral modifications that can lead to fragmentation of habitat. Some disturbance-adapted species, especially shrub/scrub bird species, thrive along edges of roads and other developed areas. Other wildlife species, especially large mammals, avoid human-disturbed areas and do not tend to cross roads. Roads also increase mortality of small mammals from both increased vehicle collisions and increased predation from large mammals, while roads increase mortality of large mammals as a result of vehicle collisions. Pollution and bioaccumulation are secondary effects of roads and other development that increase edge effects on wildlife and wildlife habitats.

**Endangered species:** A plant or animal that is in danger of extinction throughout all or a significant portion of its range.

**Environmental Impact Statement (EIS):** An analytical document that portrays potential impacts on the human environment of a particular course of action and its possible alternatives. Required by the National

Environmental Policy Act, an EIS is prepared for use by decision makers to assess the environmental consequences of a potential decision.

**Ephemeral stream:** A stream that flows only in direct response to precipitation in the immediate watershed or in response to the melting of a cover of snow and ice and has a channel bottom that is always above the local water table.

**Erosion:** The wearing away of the land surface by running water, wind, ice, or other geologic agents and by such processes as gravitation creep.

**Exclusion area:** An environmentally sensitive area where rights-of-way will be granted only in cases where there is a legal requirement to provide such access.

**Extraction:** The removal of mineral resources from the land by mining, quarrying, or excavation.

**Federal lands:** Lands, or interests in lands (such as easements and rights-of-way), owned by the United States.

**Fire regimes:** The characteristics of fire in a given ecosystem, including factors such as frequency, intensity, severity, and patch size. The terms used for the different fire regimes are: Nonlethal, Mixed 1, Mixed 2, and Lethal. Nonlethal fires are generally of the lowest intensity and severity with the smallest patches of mortality, while lethal fires are generally of the highest intensity and severity with the largest patches of mortality. The others fall in between.

**Fire Regime Condition Class (FRCC):** An interagency, standardized tool for determining the degree of departure from reference condition vegetation, fuels, and disturbance regimes. Assessing FRCC can help guide management objectives and set priorities for treatments.

**Fire intensity:** The effects of fire on the above-ground vegetation generally described in terms of mortality.

**Fire severity:** Fire effects at and below the ground surface. Describes the impacts to organic material on the ground surface, changes to soils, and mortality of below-ground vegetative buds, roots, rhizomes, and other organisms.

**Fire suppression tactics:** The tactical approaches regarding suppression of a wildland fire. These range from Control, Confine, Contain, and Monitor. Control is the most aggressive tactic, while Monitor is the least.

**Fire use:** The combination of wildland fire use and prescribed fire application to meet resource objectives.

**Floodplain:** The land that borders a water body and is subject to flooding on a periodic basis.

**Fluid minerals:** In this case, oil, gas, geothermal resources, carbon dioxide, helium, and coal bed methane.

**Fossil:** Any remains, trace, or imprint of a plant or animal that has been preserved by natural process in the earth's crust since some past geologic time.

**Geographic Information System (GIS):** A system of computer hardware, software, data, people and applications that capture, store, edit, analyze, and graphically display a potentially wide array of geospatial information.

**Grazing:** Consumption of native forage from rangelands or pastures by livestock or wildlife.

**Grazing allotment:** An area where one or more livestock operators graze their livestock. An allotment generally consists of Federal land but may include parcels of private or State-owned land.

**Grazing district:** An administrative unit of BLM-managed rangelands established by the Secretary of the Interior under the Taylor Grazing Act of 1934. Grazing units are not the same as BLM administrative districts.

**Grazing fee:** A charge, usually on a monthly basis, for grazing a specific kind of livestock.

**Grazing lease:** A document authorizing use of the public lands outside of an established grazing district. Grazing leases specify all authorized use including livestock grazing, suspended use, and conservation use. Leases specify the total number of animal unit months apportioned, the area authorized for grazing use, or both.

**Grazing permit:** An authorization that allows grazing on public lands. Permits specify class of livestock on a designated area during specified seasons each year. Permits are of two types: preference (10-year) and temporary nonrenewable (1 year).

**Grazing preference:** The total number (active and suspended non-use) of animal unit months of livestock grazing on public land, apportioned and attached to base property owned or controlled by a permittee.

**Grazing season:** On Federal lands, an established period for which grazing permits or leases are issued.

**Grazing system:** A systematic sequence of grazing use and nonuse of an allotment (pasture or management unit) to meet multiple use goals by improving the quality and amount of vegetation.

**Ground water:** Subsurface water that fills available openings in rock or soil materials to the extent that they are considered water saturated.

**Guidelines:** Actions or management practices that may be used to achieve desired outcomes, sometimes expressed as Best Management Practices. Guidelines may be identified during the land use planning process, but they are not considered a land use plan decision unless the plan specifies that they are mandatory. Guidelines for grazing administration must conform to 43 CFR4180.2. Guidelines: (1) typically identify and prescribe methods of influencing or controlling specific public land uses; (2) are developed and applied consistent with the desired condition and within site capability; and (3) may be adjusted over time.

**Habitat:** A specific set of physical conditions in a geographic area(s) that surrounds a single species, a group of species, or a large community. In wildlife management, the major components of habitat are food, water, cover, and living space.

**Habitat corridors:** A strip or block of habitat connecting otherwise isolated units of similar habitat that allows the dispersal of organisms and the consequent mixing of genes.

**Habitat fragmentation:** The division of large, continuous areas of habitat into smaller patches isolated from one another. The effects of habitat fragmentation include loss of habitat area and the creation of smaller, more isolated patches of remaining habitat.

**Habitat Management Plan (HMP):** A written and officially approved plan for a specific geographical area of public land that identifies wildlife habitat and related objectives, establishes the sequence of actions for achieving objectives, and outlines procedures for evaluating accomplishments.

**Hazardous materials:** Substances or mixtures of substances that have the capability of either causing or significantly contributing to an increase in mortality or an increase in serious irreversible or incapacitating reversible illness, or posing a substantial present or potential risk to human health or the environment.

**Hazardous substance:** Term used by the U.S. Environmental Protection Agency for chemicals that must be reported if released into the environment above a certain amount and, depending on the threat to the environment, Federal involvement in handling the incident can be authorized under the Comprehensive Environmental Response, Compensation, and Liability Act.

**Hazardous waste:** The Resource Conservation and Recovery Act defines hazardous waste as a solid waste that may cause an increase in mortality or serious illness or pose a substantial threat to human health and the environment when improperly treated, stored, transported, disposed of, or otherwise managed. A waste is hazardous if it appears on a series of lists compiled by the U.S. Environmental Protection Agency or exhibits characteristics of ignitability, corrosivity, reactivity, and/or toxicity.

**Herd Management Area (HMA):** The habitat occupied by a wild horse herd on the date of the signing of the Wild Free-Roaming Horses and Burros Act. The Bordo Atravesado HMA boundary was delineated by the following: wild horse movements and use patterns; horse population and vegetation inventories; allotment terrain, water sources and existing fences.

**Herd Management Plan:** An activity plan for a wild horse HMA that addresses herd and habitat objectives, monitoring methods and schedules, the AML, criteria for selective removal of animals, the methods of population control and any restrictions on other resource uses or users. (BLM Manual 4710.3 A.)

**Heritage tourism:** The business and practice of attracting and accommodating visitors to a place or area based especially on the unique or special aspects of that locale's history, landscape (including trail systems), and culture.

**Hydrology:** The study of the movement, distribution, and quality of water throughout the earth, addresses both the hydrologic cycle and water resources.

**Indirect effect (or impact):** Secondary effects that occur in locations other than the initial action or later in time, but that are caused by the proposed action.

**Interdisciplinary Team (IDT):** A team of varied land use and resource specialists formed to provide a coordinated, integrated information base for overall land use planning and management.

**Interim Management Policy and Guidelines for Lands Under Wilderness Review:** This policy provides guidance for managing existing Wilderness Study Areas to ensure that an area's wilderness values are not impaired prior to the establishment of a wilderness area or an area's release from consideration for this status.

**Invasive species:** A species that is not native to an ecosystem whose introduction does or is likely to cause economic or environmental harm or harm to human health.

**Issue:** Describes the relationship between actions (proposed, connected, cumulative, similar) and environmental (natural, cultural, and socioeconomic) resources. Issues may be questions, concerns, problems, or other relationships, including beneficial ones. Issues do not predict the degree or intensity of harm the action might cause, but alert the reader as to what the environmental problems might be.

**Jurisdiction:** The legal right to control or regulate use of land or a facility. Jurisdiction requires authority, but not necessarily ownership.

**Karst:** Irregular limestone region with sinks, underground streams, and caverns. Karst landscapes owe their existence to the removal of bedrock in solution and to the development of underground drainage without the development of surface stream valleys. Within these broad constraints, karst landscapes show much variation and are usually described in terms of a dominant landform.

**Karst feature:** Cavities, sinkholes, or other solution features in karst terrain that seem to be a cave, but do not quite fit the definition given above. Lava tubes and bubbles, while not karst, are included as caves if they meet the cave definition.

**Known mineral value:** Defined in 43 CFR 2720.0-5: "...means mineral rights in lands containing geologic formations that are valuable in the monetary sense for exploring, developing, or producing natural mineral deposits. The presence of such mineral deposits with potential for mineral development may be known because of previous exploration, or may be inferred based on geologic information."

**Landform:** A discernible natural landscape that exists as a result of geological activity, such as a plateau, plain, basin, or mountain.

**Land Use Plan (LUP):** A set of decisions that establish management direction for land within an administrative area, as prescribed under the planning provisions of Federal Land Policy and Management Act; an assimilation of land-use-plan-level decisions developed through the planning process outlined in 43 CFR 1600, regardless of the scale at which the decisions were developed. Resource management plans are land use plans.

**Landscape:** An area composed of interacting ecosystems that are repeated because of geology, landform, soils, climate, biota, and human influences throughout the area. Landscapes are generally of a size, shape, and pattern, which is determined by interacting ecosystems.

**Lease:** An authorization or contract by which one party (lessor) conveys the use of property, such as real estate, to another (lessee) in return for rental payments. In addition to rental payments, lessees also pay royalties (a percentage of value) to the lessor from resource production.

**Leasable minerals:** Those minerals or materials designated as leasable under the Mineral Leasing Act of 1920. They include coal, phosphate, asphalt, sulfur, potassium and sodium minerals, and oil, gas, and geothermal resources.

**Limited area designation:** An area restricted at certain times in certain areas, and/or to certain vehicular use.

**Locatable mineral:** Any valuable mineral that is not salable or leasable, including gold, silver, copper, uranium, etc., that may be developed under the General Mining Law of 1872.

**Management Situation Analysis (MSA):** Assessment of the current management direction. It includes a consolidation of existing data needed to analyze and resolve identified issues, a description of current BLM management guidance, and a discussion of existing problems and the opportunities for solving them.

**Mechanical treatment:** Involves the use of various types of mechanized equipment to clear out understory, brush, and/or trees and then pile and burn it to reduce fuel loadings and wildfire risk.

**Mineral entry:** The location of mining claims by an individual to protect his/her right to a valuable mineral.

**Mineral potential:** The four categories of mineral potential are defined in BLM Manual 3031 and are based on the geologic environment, inferred geologic processes, and reported mineral occurrences. Mineral potential is designated as none, low, moderate, or high. In addition, each mineral potential category is supplemented with a designation of the level of certainty regarding the level of confidence in the assessed data.

**Mineral rights:** Outstanding third-party rights or an interest in minerals not owned by the person or party conveying the land to the United States. Mineral rights are an exception in a deed that is the result of prior conveyance separating title of certain minerals from the surface estate.

**Mineral withdrawal:** A withdrawal of public lands, which are potentially valuable for leasable minerals. This precludes the disposal of the lands except with a mineral reservation, or unless the lands are found to not be valuable for minerals.

**Multiple use:** Multiple use as defined by the Multiple Use – Sustained Yield Act of 1960 means, (1) the management of all the various renewable surface resources so that they are used in the combination that will best meet the needs of the American people, (2) making the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use to conform to changing needs and conditions, (3) that some land will be used for less than all of the resources, and (4) harmonious and coordinated management of the various resources, each with the other, without impairment of the productivity of the land, with consideration being given to the relative values of the various resources, and not necessarily the combination of uses that will be given the greatest dollar return or the greatest unit output.

**Multiple Use Conflict Analysis:** 43 CFR 3420.1-4(e) requires the BLM to analyze potential coal leasing areas to assess whether the lands are actually unsuitable for coal leasing due to conflicts with other resource concerns. This analysis is included in Multiple-Use Screening Analysis.

**National Ambient Air Quality Standards (NAAQS):** The allowable concentrations of air pollutants in the air specified by the Federal government. The air quality standards are divided into primary standards (based on the air quality criteria and allowing an adequate margin of safety and requisite to protect the public health) and secondary standards (based on the air quality criteria and allowing an adequate margin of safety and requisite to protect the public welfare) from any unknown or expected adverse effects of air pollutants.

**National Environmental Policy Act of 1969 (NEPA):** An Act that encourages productive and enjoyable harmony between man and his environment and promotes efforts to prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man; enriches understanding of the ecological systems and natural resources important to the Nation, and established the Council on Environmental Quality.

**National Register of Historic Places (National Register):** A listing of architectural, historical, archaeological, and cultural sites of local, State, or national significance. The list of sites was established by the Historic Preservation Act of 1966 and is maintained by the National Park Service.

**Native species:** With respect to a particular ecosystem, a species that, other than as a result of an introduction, historically occurred or currently occurs in that ecosystem.

**Nonpoint source pollution:** Pollution from diffuse sources caused by rainfall or snowmelt moving over and through the ground.

**Noxious weeds:** Plant species that have been legally designated as unwanted or undesirable. This includes national, State, and county or local designations. Typically, an undesirable noxious weed species can crowd out more desirable species. According to the Federal Noxious Weed Law, native plant species are not designated “noxious.” Native plant species that may be of management concern, such as poisonous plants or desert shrub and subshrub species, are not considered priorities for noxious weed work or funding.

**Off-Highway Vehicle (OHV):** A vehicle (including four-wheel drive, trail bikes, all-terrain vehicles, and snowmobiles, but excluding helicopters, fixed-wing aircraft, and boats) capable of traveling off road over land, water, ice, snow, sand, marshes, and other terrain. OHV designations are defined in Appendix J.

**Open:** Generally denotes that an area is available for a particular use or uses. Refer to specific program definitions found in law, regulations, or policy guidance for application to individual programs. For example, 43 CFR 8340.0-5 defines the specific meaning of “open” as it relates to off-highway vehicle use.

**Paleontology:** The science of animal and plant fossil remains.

**Particulate matter:** Includes dust, soot, and other tiny bits of solid materials that are released into and move around in the air. Particulates are produced by many sources, including burning of diesel fuels by trucks and buses, incineration of garbage, mixing, and application of fertilizers and pesticides, road construction, industrial processes such as steel making, mining operations, agricultural burning (field and slash burning), and operation of fireplaces and woodstoves.

**Perennial plant:** A plant that has a life cycle of 3 or more years.

**Perennial stream:** A stream or that part of a stream that flows continuously during all of the calendar year as a result of ground-water discharge or surface runoff.

**Permeability:** The ease with which gases, liquids (water), or plant roots penetrate or pass through a bulk mass of soil or a layer of soil. Since different soil horizons vary in permeability, the particular horizon under question should be designated.

**Permit:** Permits are one of three forms of a land use authorization (the others are leases and easements). Permits are short-term, revocable authorizations to use public lands for specific purposes that involve either little or no land improvement, construction, or investment that can be amortized within the term of the permit. A permit conveys no possessory interest. The permit is renewable at the discretion of the authorized officer and may be revoked in accordance with its terms and applicable regulations.

**Permitted livestock use:** The forage allocated by, or under the guidance of, an applicable land use plan for livestock grazing in an allotment under a permit or lease and expressed in animal unit months.



**Planning criteria:** The standards, rules, and other factors developed by managers and interdisciplinary teams for their use in forming judgments about decision making, analysis, and data collection during planning. Planning criteria streamline and simplify the resource management planning actions.

**Point-source pollution:** Pollution that comes from an identified source or location—“end-of-the-pipe” pollution.

**Potable water:** Water suitable for drinking.

**Preliminary Investigations:** Geophysical exploratory activities meant to locate potential oil, gas, or other fluid mineral resources prior to applying for a lease. Operators seeking to perform such investigations must complete and file at Form 3150-4, “Notice of Intent to Conduct Oil and Gas Exploration Operations” for all operations on public lands.

**Prescribed fire:** Fire set intentionally in wildland fuels under prescribed conditions and circumstances. Prescribed fire should be used to mitigate the suppression of natural fires.

**Prevention of significant deterioration:** A Clean Air Act requirement to include a permit review process applicable to the construction and operation of new and modified stationary sources in attainment areas.

**Primitive:** An unmodified natural environment of fairly large size. Use of motor vehicles is prohibited. There is an extremely high probability of experiencing isolation, closeness to nature, and self-reliance on outdoor skills.

**Programmatic Environmental Impact Statement (PEIS):** A comprehensive National Environmental Policy Act document prepared to analyze the environmental consequences of alternative programs or management strategies under consideration. A programmatic EIS is prepared to help determine a consistent, broad management approach that can be used by BLM field-level staff for local land use planning. The programmatic environmental impact statement is intended to support and expedite site-specific analysis or NEPA efforts for individual projects.

**Public land:** Land or interest in land owned by the United States and administered by the Secretary of the Interior through the BLM without regard to how the United States acquired ownership, except lands located on the Outer Continental Shelf, and land held for the benefit of Indians, Aleuts, and Eskimos.

**Raptors:** Birds of prey, such as the eagle, falcon, hawk, owl, or vulture.

**Raptor nest:** For the purposes of this RMP, a raptor nest is defined as any raptor or corvid nest.

**Reclaim/reclamation:** The process of converting disturbed land to its former use or other productive uses. In some instances, the term is also used for the act of adapting wild or natural resources to serve a utilitarian purpose such as converting riparian habitats to agriculture.

**Recreation experiences:** Psychological outcomes realized either by recreation-tourism participants as a direct result of their onsite leisure engagements and recreation-tourism activity participation or by non-participating community residents as a result of their interaction with visitors and guests within their community and/or interaction with the BLM and other public and private recreation-tourism providers and their actions.

**Recreation opportunities:** Favorable circumstances enabling visitors’ engagement in a leisure activity to realize immediate psychological experiences and attain more lasting, value-added beneficial outcomes.

**Recreational Opportunity Spectrum (ROS):** A conceptual planning tool that characterizes recreation opportunities in terms of setting, activity, and experience opportunities. ROS is based on a set of criteria according to a land's physical, social, and managerial settings, which in combination define a land area's capability and suitability for providing a particular range of recreational experience opportunities. In ROS, the setting, activities, and opportunities for experiences are arranged along a spectrum of six classes:

- (1) primitive,
- (2) semi-primitive non-motorized,
- (3) semi-primitive motorized,
- (4) roaded natural,
- (5) rural, and
- (6) urban.

The resulting ROS analysis defines specific geographic areas on the ground, each of which encompasses one of the six classes.

**Recreation settings.** The collective, distinguishing attributes of landscapes that influence, and sometimes actually determine, what kinds of recreation opportunities are produced. These include opportunities for engaging in specific recreation activities, attaining both satisfying and dissatisfying recreation experiences, and attaining both beneficial and unbeneficial outcomes.

**Rehabilitate:** Restore to a state of good condition or operation (e.g., a management alternative and/or practice that restores landscapes to a desired condition).

**Reserved mineral rights:** The retention of ownership of all or part of the mineral rights by a person or party conveying land to the United States. Conditions for the exercising of these rights have been defined in the Secretary of the Interior's "Rules and Regulations to Govern Exercising of Mineral Rights Reserved Conveyance to the United States" attached to and made a part of deeds reserving mineral rights.

**Restore/restoration:** The process of restoring site conditions as they were before land disturbance. Note: restoration involves restoring a site to a specific point in time.

**Resource management plan (RMP):** A land use plan that establishes land use allocations, multiple-use guidelines, and management objectives for a given planning area. The RMP planning system has been used by the BLM since 1980.

**Revision:** The process of completely rewriting the land use plan due to changes in the planning area affecting major portions of the plan or the entire plan.

**Right-of-Way (ROW):** Land authorized to be used or occupied for the construction, operation, maintenance, and termination of a project, pursuant to a right-of-way authorization.

**Riparian:** Areas of wetland transition between permanently saturated wetlands and upland areas. These areas exhibit vegetation or physical characteristics reflective of permanent surface or subsurface water influence.

**Riparian habitat:** Riparian habitat is an ecological transition between an in-stream community of plants and animals and the adjacent, upland community. Normally the term is used for perennial, or year-round

flowing streams. The term *xeroriparian habitat* is used to describe the distinct plant and animal communities that concentrate around dry washes and are sustained by desert storms.

**Roaded natural:** a predominantly natural-appearing environment with moderate evidence of humans. Evidence usually harmonizes with the natural environment. Management provides for the use of conventional motorized vehicles. There is an equal probability to experience affiliation with other user groups and for isolation and interaction with the natural environment.

**Roadless:** Refers to the absence of roads constructed and maintained by mechanical means.

**Roads:** Vehicle routes that are improved and maintained by mechanical means to ensure relatively regular and continuous use. (A way maintained strictly by the passage of vehicles does not constitute a road.)

**Rural:** This is a substantially modified environment. Resource modifications and utilization practices are to enhance specific recreation activities. Facilities are designed for use by a large number of people. Motorized use and parking opportunities are available. The probability of user interaction is moderate to high, as is the convenience of sites and opportunities.

**Sacred sites (American Indian):** Defined in Executive Order 13007 as “any specific, discrete, narrowly delineated location on Federal land that is identified by an Indian tribe, or Indian individual determined to be an appropriately authoritative representative of an Indian religion, as sacred by virtue of its established religious significance to, or ceremonial use by, an Indian religion; provided that the tribe or appropriately authoritative representative of an Indian religion has informed the agency of the existence of such a site.”

**Salable minerals:** Minerals that may be sold under the Material Sale Act of 1947, as amended. Included are common varieties of sand, stone, gravel, and clay.

**Saturated:** When referring to soil, the maximum amount of water that can be held either when the soil is frozen or the spaces between the soil particles are filled with water. Any additional seepage over saturated soil will result in runoff.

**Scenic area:** An area with a landscape character that exhibits a high degree of variety and harmony among the basic elements that results in a pleasant landscape to view.

**Scenic quality:** The relative worth of a landscape from a visual perception point of view. The seven factors (landform, vegetation, water, color, adjacent scenery, scarcity, and cultural modifications) used to evaluate the scenic quality of a landscape. The relative scenic quality (A, B, or C) assigned to a landscape by applying the scenic quality evaluation key factors, with scenic quality A being the highest rating. The scenic-quality-rating unit is defined as a portion of the landscape that displays primarily homogenous visual characteristics of the basic landscape features (land and water form, vegetation, and structures).

**Season of use:** The time during which livestock grazing is permitted on a given range area, as specified in the grazing permit.

**Semi-primitive Motorized:** This is a predominantly natural or natural-appearing environment of moderate to large size. User interaction is low, but there is evidence of other users. Minimum on-site controls and restrictions may be present. Use of motorized vehicles is permitted. There is a moderate probability of experiencing isolation, closeness to nature, and self-reliance in outdoor skills.

**Semi-primitive Non-motorized:** This is a predominantly natural or natural-appearing environment of moderate to large size. Minimum on-site controls and restrictions may be present. Use of motorized

vehicles is prohibited. There is a high probability of experiencing isolation, closeness to nature, and self-reliance in outdoor skills

**Sensitive species:** Species not yet officially listed but that are undergoing status review for listing on the U.S. Fish and Wildlife Service official Threatened and Endangered list; species whose populations are small and widely dispersed or restricted to a few localities; and species whose numbers are declining so rapidly that official listing may be necessary.

**Site hardening:** Site hardening is a measure, or combination of measures, taken to make an archaeological or historic site less vulnerable to effects from visitation. These measures may include surface collection, signing, on-site hosts, vehicle barriers, data recovery, or other means.

**Special Management Area (SMA):** An area identified by the BLM for the management of a specific resource or resources.

**Special Recreation Management Area (SRMA):** A public lands unit identified in land use plans to direct recreation funding and personnel to fulfill commitments made to provide specific, structured recreation opportunities (i.e., activity, experience, and benefit opportunities). The BLM recognizes three distinct types of SRMAs: community-based, intensive, and undeveloped big open.

**Special Status Species (SSS):** Includes proposed species, listed species, and candidate species under the Endangered Species Act; state-listed species; and BLM state director-designated sensitive species (see BLM Manual 6840, Special Status Species Policy).

**Standard:** A description of the physical and biological conditions or degree of function required for healthy, sustainable lands (e.g., Land Health Standards). To be expressed as a desired outcome (goal).

**Streamside Management Zone (SMZ):** Those areas adjacent to natural streams and rivers that serve as buffer zones to filter sedimentation from land-disturbing activities.

**Structural diversity:** The diversity of the composition, abundance, spacing, and other attributes of plants in a community.

**Sustainable use (production):** The continuation of livestock grazing at a uniform level while maintaining a healthy desired plant community.

**Terms and conditions:** Stipulations contained in livestock grazing permits and leases as determined by the Authorized Officer to be appropriate to achieve management and resource condition objectives for the public lands and other lands administered by the BLM and to achieve standards for rangeland health and ensure conformance with guidelines for grazing administration. Terms and conditions also apply to fluid mineral leases, as defined in Appendix D.

**Threatened species:** Any animal or plant species likely to become endangered within the foreseeable future throughout all of a significant portion of its range. These species are listed by the U.S. Fish and Wildlife Service.

**Total Dissolved Solids (TDS):** A water quality criterion defining the concentration of dissolved organic and inorganic chemicals in water.

**Travel and transportation management system:** A program to be developed by the BLM to manage access for motorized, mechanized, and non-motorized recreation. Travel will be managed through a

network of authorized routes and access points. A management plan will be developed to provide policy and guidance for addressing the regulation, maintenance, and monitoring of the routes and other components of the travel and transportation system.

**Unclassified area (for air quality):** An area that cannot be classified on the basis of available information as meeting or not meeting the Federal primary or secondary ambient air quality standard for the pollutant.

**Urban:** This is a substantially urbanized environment, although the background may have natural-appearing elements. Renewable resource modernization and urbanization practices are to enhance specific recreation opportunities. Vegetative cover is often exotic and manicured. Large numbers of users can be expected on site and in nearby areas. Facilities for highly intensified motor-vehicle use and parking are available. The probability of user interaction is high, as is the convenience of sites and opportunities.

**Utility corridor:** A linear corridor usually designated for facilities such as power lines, pipelines, fiber-optic cables, roads, etc.

**Viable:** A [wildlife] population that has the estimated numbers and distribution of reproductive individuals to ensure its continued existence.

**Viewshed:** The landscape that can be directly seen under favorable atmospheric conditions, from a viewpoint or along a transportation corridor.

**Visual resources:** The visible physical features on a landscape (e.g., land, water, vegetation, animals, structures, and other features). Visual resources are managed by inventory and planning actions taken to identify resource values and to establish objectives for managing those values; and the management actions taken to achieve the visual management objectives.

**Visual Resource Management (VRM):** The inventory and planning actions taken to identify visual resource values and to establish objectives for managing those values, and management actions taken to achieve the established objectives.

**Visual resource management classes:** Categories assigned to public lands based on scenic quality, sensitivity level, and distance zones. There are four classes. Each class has an objective that prescribes the amount of change allowed in the characteristic landscape.

**Water Trapping:** Sometimes referred to as bait trapping, this refers to the process of capturing wild horses and burros by using bait to lure animals into a trap. This method is the least stressful to the animals and shall be used whenever practical.

**Watershed:** A watershed is the area of land where all of the water that is under it or drains off of it goes into the same place

**Ways:** Primitive two-track trails located within wilderness study areas.

**Wetlands:** Areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Examples of wetlands include marshes, shallow swamps, lakeshores, bogs, muskegs, wet meadows, estuaries, and riparian areas.

**Wilderness area:** An area officially designated as wilderness by Congress. Wilderness areas will be managed to preserve wilderness characteristics and shall be devoted to “the public purposes of recreation, scenic, scientific, educational, conservation, and historical use.”

**Wilderness Characteristics:** Areas with wilderness characteristics include roadless areas of at least 5,000 acres of public lands or of a manageable size and may be summarized as land that is: Untrammeled – essentially unhindered and free from modern human control or manipulation that generally appears to have been affected primarily by the forces of nature; Natural – ecological systems are substantially free from the effects of modern civilization; Undeveloped – essentially without permanent improvement or modern human occupation; and, has Outstanding Opportunities for solitude or primitive and unconfined recreation. (Section 2(c) of the Wilderness Act).

**Wilderness Study Area (WSA):** Areas under study for possible inclusion as a wilderness area in the National Wilderness Preservation System.

**Wildland fire (or wildfire):** Any unplanned fire, as opposed to a prescribed fire, that occurs in a natural or wildland setting and does not involve a home or other structure. These fires may require suppression actions.

**Wildland fire use (for resource benefits):** The management of naturally ignited wildland fires to accomplish specific, pre-stated resource management objectives in predefined geographic areas outlined in fire management plans, such as in areas that will benefit from fuels reduction.

**Wildland-Urban Interface (WUI):** The line, area, or zone where structures and other human developments meet or intermingle with wildland or vegetative fuel. Interface is further delineated by (1) developed areas with residential structures where many structures border wildland on a broad front or (2) developed areas with private residential structures where developments are few in number scattered over a large area surrounded by wildland.

**Windrow:** Woody debris that has been piled into a long continuous row, as if by the wind.

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## APPENDIX A: PLANNING CRITERIA

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### PLANNING ISSUES FOR THE RMP/EIS

As noted in Chapter 1: Introduction, six issues have been identified that need to be resolved through the planning process. In addition to the general planning criteria identified above, other specific planning criteria have been developed to aid in resolving the issues. These criteria are described below and are the standards that the BLM will consider in developing resolutions to the issues.

#### ***Issue 1***

**Which areas, if any, should be designated for special management, what designations should apply (areas of critical environmental concern, special management areas, or other), and how should they be managed?**

To resolve this issue, the BLM considered:

- Resource to be managed
- Manageability of the areas
- Existing areas of critical environmental concern representation
- Current and potential land uses
- Effects of designation on other resources and uses
- Social and economic effects
- Public interests and attitudes
- Consistency of designation with resource plans of other agencies, local government, or Tribes
- Long-term versus short-term benefit
- Public health and safety
- Effects of non-designation on resources

#### ***Issue 2***

**What type of management should be undertaken at the watershed level to reduce erosion, improve surface water quality, maintain and improve vegetation, and reduce nonpoint-source pollution?**

To resolve this issue, the BLM considered:

- Watershed condition and trend and productivity potential
- Resource values
- Current and potential land uses
- Social and economic effects
- Public interests and attitudes
- Condition and trend of native plant communities
- Presence of special status species, both plants and animals
- Input from the scientific community
- Need for increased vegetation cover to reduce soil erosion, increase livestock forage, improve wildlife habitat and improve water quality
- Habitat fragmentation/connectivity for all wildlife species
- Use of land treatments to maintain or improve plant communities
- Maintenance or enhancement of biological diversity
- Presence of noxious weeds and conflicts between exotic and native species

#### ***Issue 3***

**How should potential energy, fluid, and solid mineral development in the Planning Area be managed?**

To resolve this issue, the BLM considered:

- Resource values
- Current and potential land uses
- Social and economic effects
- Public interests and attitudes
- National energy policy
- Potential for alternative energy sources
- Input from the scientific community
- Reasonable foreseeable development of the resource
- Effects on other resources
- Habitat fragmentation/connectivity for all wildlife species
- Presence of special status species, both plant and animal and their habitats

#### ***Issue 4***

**How should travel and transportation including motorized vehicle use, off-highway vehicles, mountain biking, hiking, horseback riding, and others be managed to satisfy public demand while protecting the natural values of the public land?**

To resolve this issue, the BLM considered:

- Existing route network and designations
- Public demand for additional activities and locations
- Compatibility with adjacent land uses and resources
- Effects of vehicle uses on other resources and uses
- Public health and safety
- Social and economic effects
- Public access to public land
- Needs of other resource uses
- Route designation and closure criteria (as described in Appendix J)

#### ***Issue 5***

**What land use allocations or lands and realty program initiatives need to be addressed in the plan to accommodate the effective management and support of other resource programs within the area?**

To resolve this issue, the BLM considered:

- Current and future uses of public land
- Social and economic effects
- Public interest and attitudes
- Compatibility of adjacent land uses and resources
- Public access to public lands
- Long-term versus short-term benefit

#### ***Issue 6***

**How should the BLM best pursue cultural and recreational initiatives to provide the public with quality tourism and cultural heritage tourism opportunities?**

To resolve this issue, the BLM considered:

- Current and future uses of public land
- Public interest and attitudes
- Social and economic effects
- Public access to public lands
- Local community and Tribal needs and interests
- Input from the scientific community
- Opportunities for local partnerships
- Long-term versus short-term benefit
- Site hardening and vulnerability to effects from visitation

### ***Issues Considered but Eliminated from Detailed Analysis***

During the scoping process and the initial phases of plan development, a number of potential alternatives and issues were identified. However, some of these issues were determined to be beyond the scope of the plan and thus were eliminated from further consideration. These issues included:

- ***WSA Designations*** – During public scoping, it was suggested that the BLM consider designating additional lands with wilderness values as Wilderness Study Areas (WSAs). However, BLM policy does not allow for the designation of WSAs through the land use planning process. Therefore, designation of WSAs was not considered in the RMP. Any areas with wilderness characteristics—areas that are essentially natural, of adequate size, and providing opportunities for either solitude or primitive, unconfined recreation—may be managed under another designation such as ACEC or SMA.
- ***Bioaccumulation of Contaminates in Fish and Wildlife Species*** – Bioaccumulation of contaminants in fish and wildlife species as a result of power plant emissions was raised as a concern during public scoping. This was not addressed as an issue in the RMP for a number of reasons. Power plants outside of the Planning Area are beyond the scope of this RMP, and therefore their emissions cannot be addressed. At this time, there is no proposal for the development of a coal-fired power plant anywhere in the Planning Area. If such a proposal were to come forth in the future, an EIS will be required as part of the permitting process. Such an EIS will consider all cumulative impacts to the Planning Area, including contaminate emissions, before a decision is made regarding the proposed plant
- ***Urban Interface Problems*** – During the scoping process, urban interface problems were raised as a possible issue. These issues centered on the second home/retirement home subdivisions in Catron County. In analyzing this concern, the planning team determined it is primarily a recreation issue. It was concluded that these problems could be adequately addressed through special designation management, OHV management, and trail and access management.

Through this planning process, the BLM considered and evaluated public land for ACEC designation. BLM policy (BLM Manual 1613 and Title 43 Code of Federal Regulations Part 1610.7-2 [43 CFR 1610.7-2]) requires that before an ACEC can be designated, it must meet certain criteria to establish the area's relevance and importance. If the area meets the relevance and importance criteria, it must then be demonstrated to require special management attention to protect the important and relevant values. That is, the area must require management prescriptions or measures to protect the important and relevant values from the potential effect of actions permitted by the RMP.

Initially, the BLM identified broad areas of public land to evaluate under the ACEC designation criteria. These areas were identified by individual resource specialists under specific resource programs including wildlife, threatened and endangered species, cultural resources, and recreation. As the evaluation and coordination process progressed, multiple resource values were recognized in some areas, consolidating some ACEC designation proposals. During this process, some proposed ACEC areas were eliminated because they did not meet the ACEC designation criteria. Acreages and special management prescriptions were modified throughout the process with the goal of identifying only those areas most suitable for ACEC designation. These areas were carried forward under the alternative plans considered.

Some of the management strategies considered, such as implementation of various Best Management Practices, development of watershed management plans, and development of partnerships, do not require RMP-level decisions to implement. These decisions can be implemented at any time without amending or revising the RMP; therefore, they were not included in the alternatives descriptions. Other proposed management strategies, such as maintaining vegetative cover and soil conditions, are managed under the

New Mexico Standards for Public Land Health and Guidelines for Livestock and Grazing Management (New Mexico Standards and Guidelines) and do not require separate management decisions.

Lastly, some management strategies were considered but eliminated because they are out of the scope of this RMP, and/or not within the BLM's decision framework and authority. For example, requiring licenses and permits or imposing fees on OHV use is not within the scope of this RMP. Likewise, providing access across private land or authorizing or restricting activities on nonpublic land (except activities associated with Federal subsurface minerals) is not within the BLM's decision framework and authority.

## **GENERAL PLANNING CRITERIA**

The following general planning criteria have guided the preparation of this Resource Management Plan and will continue to guide land use decisions made in the future.

- Apply the principles of multiple use and sustained yield as set forth in the Federal Land Policy and Management Act and other applicable laws.
- Use a systematic, interdisciplinary approach to achieve integrated consideration of physical, biological, economic, social, and environmental aspects of public land management.
- Give priority to the identification, designation, protection, and special management of areas of critical environmental concern.
- Consider the relative significance of the public land products, services, and uses to local economies.
- Rely on available inventories of the public lands, their resources, and other values with updating the inventory to the extent necessary to reach sound management decisions.
- Consider present and potential uses of the public lands.
- Consider impacts of uses on adjacent or nearby non-Federal lands and on nonpublic land surface over federally owned minerals.
- Consider the relative scarcity of the values involved and the availability of alternative means (including recycling) and sites for realization of those values.
- Weigh long-term benefits and detriments against short-term benefits and detriments.
- Comply fully with applicable pollution control laws, regulations, and policies, including State and Federal air, water, noise, or other pollution standards or implementation plans.
- Coordinate Bureau of Land Management (BLM) resource inventory, planning, and management activities with the resource planning and management programs of other Federal departments and agencies, State and local governments, and Native American Tribes to the extent consistent with the laws governing the administration of the public lands.
- Provide for public involvement including early notice and frequent opportunity for citizens and interested groups and others including Native American Tribes to participate in and comment on the preparation of plans and related guidance.
- Comply fully with all Federal laws that guide management of specific resources such as the Endangered Species Act, Clean Water Act, National Historic Preservation Act, Taylor Grazing Act, and others.

- Comply fully with the BLM national policy on special status species that states “the BLM shall carry out management consistent with the principles of multiple use, for the conservation of candidate (and sensitive) species and their habitats and shall ensure that actions authorized, funded, or carried out do not contribute to the need to list any of these species as threatened or endangered.” (BLM 6840 Manual)
- Reflect Federal land management agency obligations under applicable Tribal treaties and laws or executive orders relating to Native American reserved rights, religious freedoms, traditional use areas, etc.
- Comply with EO 13443 – Facilitation of Hunting Heritage and Wildlife Conservation.

## APPENDIX B: ACTS OF AUTHORITY AND MANDATES FOR THE BLM

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A number of Federal statutes have been enacted over time to establish and define the authority of the Bureau of Land Management (BLM) to make decisions on the management and use of resources on public land. Following is a list of major legal authorities relevant to BLM land use planning.

*Federal Land Policy and Management Act (FLPMA) of 1976*, as amended (43 United States Code [U.S.C.] 1701 et seq.) provides the authority for BLM land use planning. This statute and its implementing regulations define principles for the management of public land and its resources. This Act directs the Secretary of the Interior to develop, maintain, and, when appropriate, revise land use plans that provide for the use of public land managed on the basis of multiple use and sustained yield unless otherwise specified by law. Through FLPMA, the BLM is responsible for the balanced management of the public land and resources and their various values. FLPMA specifically states that public land will be managed under the principles of multiple use, and, further, indicates that multiple use includes harmonious and coordinated management of the various resources without permanent impairment of the productivity of the land and the quality of the environment.

- *Section 102 (a) (7) and (8)* sets forth the policy of the United States concerning the management of BLM-managed lands.
- *Section 201* requires the Secretary to prepare and maintain an inventory of all BLM-managed public lands and their resource and other values, giving priority to areas of critical environmental concern, and, as funding and workforce are available, to determine the boundaries of the public lands, provide signs and maps to the public, and provide inventory data to state and local governments.
- *Section 202 (a)* requires the Secretary, with public involvement, to develop, maintain, and when appropriate, revise land use plans that provide by tracts or areas for the use of the BLM lands.
- *Section 202 (c) (9)* requires that land use plans for BLM-managed public lands be consistent with Tribal plans and, to the maximum extent consistent with applicable Federal laws, with State and local plans.
- *Section 202 (d)* provides that all public lands, regardless of classification, are subject to inclusion in land use plans, and that the Secretary may modify or terminate classifications consistent with land use plans.
- *Section 202 (f) and 309 (e)* provide that Federal, State, and local governments and the public be given adequate notice and an opportunity to comment on the formulation of standards and criteria for, and to participate in, the preparation and execution of plans and programs for the management of the public lands.
- *Section 302 (a)* requires the Secretary to manage BLM-managed public lands under the principles of multiple use and sustained yield, in accordance with, when available, land use plans developed under Section 202 of FLPMA, except that where a tract of BLM-managed public lands has been dedicated to specific uses according to any other provisions of law, it shall be managed in accordance with such laws.
- *Section 302 (b)* recognizes the entry and development rights of mining claimants, while directing the Secretary to prevent unnecessary or undue degradation of the public lands.
- *Section 603* specifically directs the BLM to carry out a wilderness review of public land and directs the BLM to manage such lands in a manner so as not to impair the suitability of such areas for preservation as wilderness.



The *National Environment Policy Act of 1969*, as amended (42 U.S.C. 4321 et seq.) requires the consideration and public availability of information regarding the environmental impacts of major Federal actions significantly affecting the quality of the human environment. The law further requires the Federal Authorized Officers to identify and describe the significant environmental issues associated with their decisions and to develop alternatives to a proposed action (including the alternative of no action). Federal Authorized Officers must disclose the direct, indirect, and cumulative effects of the decisions; adverse environmental effects that cannot be avoided; the relationship between short-term uses of the human environment and the maintenance of long-term productivity; and any irreversible or irretrievable commitments of resources made by the decision.

The *Clean Air Act of 1990*, as amended (42 U.S.C. 7418) requires Federal agencies to comply with all Federal, state, and local requirements regarding the control and abatement of air pollution. This includes abiding by the requirements of state implementation plans. The Clean Air Act provides that each state is responsible for ensuring achievement and maintenance of air quality standards within its borders so long as such standards are at least as stringent as Federal standards established by the U.S. Environmental Protection Agency.

The *Clean Water Act (CWA) of 1987*, as amended (33 U.S.C. 1251) establishes objectives to restore and maintain the chemical, physical, and biological integrity of the Nation's water. Upon passage of the Environmental Quality Acts and adoption of the water quality standards, State agencies were empowered to enforce water quality standards as long as they are at least as stringent as the Federal standards established by the Environmental Protection Agency. The State of New Mexico has not been delegated authority from the Federal Government for any of the major water quality programs under the CWA, including the National Pollutant Discharge Elimination System, Pretreatment, Sludge Management, and Wetlands. Also, Section 404 of the CWA, administered by the U.S. Army Corps of Engineers, requires that "waters of the U.S." be protected by permits prior to dredge or fill activities occurring in such areas. Waters include intermittent streams, mud flats, and sand flats. Wetlands that meet jurisdictional criteria of Section 404 of the CWA are partially protected in that a permit is required prior to any dredge or fill activity occurring in such areas.

The *Endangered Species Act (ESA) of 1973*, as amended (16 U.S.C. 1531 et seq.) provides a means whereby the ecosystems upon which threatened and endangered species depend may be conserved and to provide a program for the conservation of such threatened and endangered species (Sec. 1531 (b), Purposes). The ESA requires all Federal agencies to seek to conserve threatened and endangered species, utilize applicable authorities in furtherance of the purposes of the ESA (Sec. 1531 (c) (1), Policy), and avoid jeopardizing the continued existence of any species that is listed or proposed for listing as threatened and endangered or destroying or adversely modifying its designated or proposed critical habitat (Sec. 1536 (a), Interagency Cooperation).

The U.S. Fish and Wildlife Service (USFWS) is responsible for administration of this Act, which also requires all Federal agencies to consult (or confer) in accordance with Section 7 of the ESA with the Secretary of the Interior, through the USFWS and/or the National Marine Fisheries Service, to ensure that any Federal action (including land use plans) or activity is not likely to jeopardize the continued existence of any species listed or proposed to be listed under the provisions of the ESA, or result in the destruction or adverse modification of designated or proposed critical habitat (Sec. 1536 (a), Interagency Cooperation, and 50 Code of Federal Regulation [CFR] 402). Mitigation measures are developed through the consultation process and are put forth as suggested conservation measures included in a formal USFWS Biological Opinion, which addresses whether the proposed action will jeopardize the continued existence of any officially listed endangered or threatened species.

*BLM Handbook H-1601-1, Land Use Planning Handbook*, provides supplemental guidance for implementing the BLM land use planning requirements established by Sections 201 and 202 of FLPMA and the regulations in 43 CFR 1600. The handbook provides guidance for preparing and amending land use plan decisions through the planning process, and for maintaining resource management plans. The handbook also provides guidance for developing implementation plans and program-specific and resource-specific decisions.

The *Statewide Resource Management Plan Amendment/Environmental Impact Statement for New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing Management (Standards and Guidelines)* established a set of standards and guidelines for public land health and guidelines for livestock grazing management in New Mexico. Standards of land health are expressions of physical and biological conditions or degree of function required for healthy and sustainable lands, and define minimum resource conditions that must be achieved. Standards describe conditions needed for healthy sustainable public rangelands and relate to all uses of public land. They provide the measure of resource quality and functioning condition by which the health of public lands will be assessed. In order to measure the effectiveness of each standard, a set of measurable indicators and associated criteria were identified. Specific standards and indicators are defined for upland sites, biotic communities (including native, threatened, endangered, and special status species), and riparian sites.

Guidelines are practices, methods, or techniques determined to be appropriate to ensure that standards can be met or that significant progress can be made toward meeting those standards. Guidelines are tools such as grazing systems, vegetative treatments, or improvement projects that help managers and permittees achieve standards. Guidelines for livestock grazing are described in the Standards and Guidelines. The livestock grazing guidelines were designed to improve public land health and are to be implemented at the watershed, allotment, or pasture level if it is determined that the standards are not being met, and livestock grazing is the cause. Guidelines for activities other than livestock grazing are not mandated through regulation; however, they may be developed should the need arise. If it is determined that the standards are not being met as a result of another activity (i.e., road placement, recreation, etc.), program leads will determine appropriate actions to ensure that standards can be met or that significant progress can be made toward meeting those standards.

The *Socorro East Grazing Environmental Impact Statement (BLM 1979)* established a grazing management and implementation program for the Socorro District Office based on growth requirements for vegetation. Objectives for a 20-year period are to enhance the vegetative resource, improve range conditions, reduce erosion and sedimentation drainage, improve water quality, provide quality habitat for wildlife and wild horses, improve the recreation and visual resources, provide a continuous supply of livestock forage, and protect archaeological and historical sites. These objectives are taken into account in the development of each Allotment Management Plan (AMP). Each AMP may be reviewed at the BLM Socorro District Office.

The *West Socorro Rangeland Management Program Environmental Impact Statement (BLM 1982)* established a grazing management and implementation program for the Divide Planning Area located in Catron, Cibola, Valencia, and Socorro Counties. This program will implement specific management actions on 187 grazing allotments within six categories, designed to improve and maintain rangeland conditions, enhance vegetative resources, provide a sustained yield of livestock forage, quality habitat for wildlife, reduce soil erosion, and improve water quality.

The *Federal Water Pollution Control Act (33 U.S.C. 1323)* requires the Federal land manager to comply with all Federal, State, and local requirements, administrative authority, process, and sanctions regarding the control and abatement of water pollution in the same manner and to the same extent as any nongovernmental entity.

The *Safe Drinking Water Act* (42 U.S.C. 201) is designed to make the Nation's waters "drinkable" as well as "swimmable." Amendments in 1996 established a direct connection between safe drinking water and watershed protection and management.

The *Resource Conservation and Recovery Act of 1976* (Public Law [P.L.] 89-72) gave the Environmental Protection Agency the authority to control hazardous waste from "cradle-to-grave." This includes the generation, transportation, treatment, storage, and disposal of hazardous waste. The Act also set forth a framework for the management of non-hazardous wastes.

The *National Trails System Act of 1968*, as amended (16 U.S.C. 1241-1249) provides that the establishment of National Recreation and National Scenic Trails would closely follow original routes of national historic significance and national scenic trails, including the Continental Divide National Scenic Trail, that will provide for maximum outdoor recreation potential. The purpose of the Act is to provide for the ever-increasing outdoor recreation needs of an expanding population and to promote the preservation of public access to, travel within, and enjoyment and appreciation of the open-air, outdoor areas, and historic resources of the Nation.

The *Wild and Scenic Rivers Act*, as amended (16 U.S.C. 1271 et seq.) requires the Federal land management agencies to identify potential river systems and then study them for potential designation as wild, scenic, or recreational rivers.

The *Wilderness Act*, as amended (16 U.S.C. 1131 et seq.) authorizes the President to make recommendations to the Congress for Federal lands to be set aside for preservation as wilderness.

The *Antiquities Act of 1906* (16 U.S.C. 431-433) protects cultural and paleontological resources on Federal lands and authorizes the President to designate national monuments on Federal lands.

The *Archaeological Resources Protection Act of 1979* (16 U.S.C. 470) secures, for the present and future benefit of the American people, the protection of archaeological resources and sites which are on public lands and Indian lands, to foster increased cooperation and exchange of information between governmental authorities, the professional archaeological community, and private individuals having collections of archaeological resources and data which were obtained before October 31, 1979.

The *National Historic Preservation Act*, as amended (16 U.S.C. 470) expands protection of historic and archaeological properties to include those of national, state, and local significance and directs Federal agencies to consider the effects of proposed actions on properties eligible for or included in the National Register of Historic Places. The Act mandates that when Federal undertakings (i.e., Federal projects or Federally funded or licensed projects) are planned and implemented, the responsible Federal agencies give due consideration to historic properties (i.e., resources eligible for the National Register of Historic Places), regardless of land status. Regulations for *Protection of Historic Properties* (36 CFR Part 800) define a process for demonstrating such consideration by consulting with the State Historic Preservation Officers, Federal Advisory Council on Historic Preservation, and other interested organizations and individuals.

The *American Indian Religious Freedom Act of 1978* (42 U.S.C. 1996) establishes a national policy to protect and preserve the right of American Indians to exercise traditional Indian religious beliefs or practices.

The *Historic Sites Act of 1935* (16 U.S.C. §461-467) defines a national policy to identify and preserve historic sites, buildings, objects, and antiquities of national significance. The law authorizes the Secretary of the Interior to conduct surveys, collect and preserve data, and acquire historic and archaeological sites.

The *Archaeological and Historic Preservation Act of 1974* (16 U.S.C. §§469-469c) provides for preservation of archaeological and historical information that might otherwise be lost as a result of Federal construction projects and other Federally licensed activities and programs. This Act stipulates that up to one percent of the funding appropriated by Congress for Federal undertakings can be spent to recover, preserve, and protect archaeological and historical data. A subsequent amendment authorized the one percent limit to be administratively exceeded under certain circumstances.

The *Native American Grave Protection and Repatriation Act of 1990* (25 U.S.C. §§3001-3013) protects the human remains of indigenous peoples and funerary objects, sacred objects, and items of cultural patrimony on Federal lands. The Act also provides for the repatriation of such remains and cultural items previously collected from Federal lands and in the possession or control of a Federal agency or Federally funded repository.

The *Curation of Federally Owned and Administered Archaeological Collections* (36 CFR Part 79) stipulates standards for facilities that curate Federally owned archaeological collections, which include not only artifacts but also all associated records and reports, in order to ensure long-term preservation of such collections.

The *White House Memorandum on Government-to-Government Relations with Native American Tribal Governments of 1994* set forth guidelines requiring Federal agencies to adhere to directives designed to ensure that the rights of sovereign tribal governments are fully respected.

The *Tribal Forest Protection Act of 2004* (P.L. 108-278) authorizes the Secretary of the Interior (with respect to land under the jurisdiction of the BLM) or the Secretary of Agriculture (with respect to land under the jurisdiction of the Forest Service), within 120 days after the request of an Indian tribe to enter into an agreement or contract to carry out a project to protect Indian forest land or rangeland (including a project to restore Federal land that borders on or is adjacent to such land) that meets specified criteria, to issue public notice of initiation of any necessary environmental review or of the potential of entering into such an agreement or contract under which the Indian tribe will carry out activities to achieve land management goals for Federal land under the Secretary's jurisdiction and bordering or adjacent to the Indian forest land or rangeland under the Indian tribe's jurisdiction.

The *Recreation and Public Purposes Act of 1926*, as amended (43 U.S.C. 869 et seq.) authorizes the Secretary of the Interior to lease or convey BLM-managed public lands for recreational and public purposes under specified conditions.

The *Land and Water Conservation Fund of 1964* (16 U.S.C. 460l-4, et seq.) provides funding to assist in preserving, developing, and assuring accessibility to outdoor recreation resources including but not limited to parks, trails, wildlife lands, and other lands and facilities desirable for individual active participation.

The *Federal Coal Leasing Amendments Act of 1976* (30 U.S.C. 201 [a] [3] [A] [i]) requires that coal leases be issued in conformance with a comprehensive land use plan.

The *Surface Mining Control and Reclamation Act of 1977* (30 U.S.C. 1201 et seq.) requires application of unsuitability criteria prior to coal leasing and also to proposed mining operations for minerals or mineral materials other than coal.

The *Mineral Leasing Act of 1920*, as amended (30 U.S.C. 181 et seq.) authorizes the development and conservation of oil and gas resources.

The *Onshore Oil and Gas Leasing Reform Act of 1987* (30 U.S.C. 181 et seq.) requires that potential oil and gas resources be adequately addressed in planning documents; the social, economic, and environmental consequences of exploration and development of oil and gas resources be determined; and any stipulations to be applied to oil and gas leases be clearly identified.

The *General Mining Law of 1872*, as amended (30 U.S.C. 21 et seq.) allows the location, use, and patenting of mining claims on sites on public domain lands of the United States.

The *Mining and Mineral Policy Act of 1970* (30 U.S.C. 21a) establishes a policy of fostering development of economically stable mining and minerals industries, their orderly and economic development, and studying methods for disposal of waste and reclamation.

The *Geothermal Steam Act of 1970* (30 U.S.C. 1001-1027) governs the lease of geothermal steam and related resources on public lands. The Act prohibits issuing geothermal leases on virtually all USFWS-administered lands.

The *Minerals Material Disposal Act of 1947*, as amended establishes the authority under which the BLM disposes of timber and other vegetative and forest products.

The *Taylor Grazing Act of 1934* (43 U.S.C. 315) establishes grazing districts of vacant, unappropriated and unreserved land from any parts of the public domain, excluding Alaska, which are not national forests, parks and monuments, Indian reservations, railroad grant lands, or revested Coos Bay Wagon Road grant lands, and which are valuable chiefly for grazing and raising forage crops, and uses a permitting system to manage livestock grazing in the districts. In addition, the Act provides for the protection, administration, regulation and improvement of the grazing districts; promotes the adoption of regulations and cooperative agreements necessary to accomplish the purposes of the Act; regulates occupancy and use; preserves the land and resources from destruction or unnecessary injury; and provides for orderly improvement and development of the range. The Act also allows for the continuing study of erosion and flood control and performance of work to protect and rehabilitate areas subject to the Act. Willful violations of the Act, or of its rules and regulations, are punishable by fine.

The *Public Rangelands Improvement Act of 1978* (43 U.S.C. 1901) provides that the public rangelands be managed so that they become as productive as feasible in accordance with management objectives and the land use planning process established pursuant to 43 U.S.C. 1712.

The *Federal Cave Resource Protection Act of 1988* (43 CFR 37.11[C] & [F]) provides protection for caves containing significant resources such as geological, biological, historical, cultural, etc.

The *Healthy Forest Initiative Act of 2002* expanded stewardship contracting authority, among other provisions including accelerating unnecessary delays and removing barriers to forest and rangeland restoration activities.

The *Healthy Forests Restoration Act of 2003* (P.L. 108-148) outlines administrative procedures for hazardous-fuel-reduction projects on Forest Service and BLM-managed public lands to reduce wildfire risks to communities, municipal water supplies, and other at-risk Federal land and to protect, enhance, and restore forest ecosystem components.

The *Carlson-Foley Act of 1968* (P.L. 90-583) directs Federal agencies to enter upon lands under their jurisdiction having noxious plants (weeds), and destroy noxious plants growing on such land.

The *Federal Noxious Weed Act of 1974* (7 U.S.C. 2801-2814) provides for the control and management of non-indigenous weeds that injure or have the potential to injure the interests of agriculture and commerce, wildlife resources, or the public health. The Act requires that each Federal agency develop a management program to control undesirable plants on Federal lands under the agency's jurisdiction; establish and adequately fund the program; implement cooperative agreements with state agencies to coordinate management of undesirable plants on Federal lands; establish integrated management systems to control undesirable plants targeted under cooperative agreements. A Federal agency is not required to carry out management programs on Federal lands unless similar programs are being implemented on state or private lands in the same area.

The Act also directs the Secretaries of Agriculture and the Interior to coordinate programs for control, research, and educational efforts associated with noxious weeds. The Secretaries must identify regional control priorities and disseminate technical information to interested State, local, and private entities.

The *Plant Protection Act of 2000* (P.L. 106-224) prohibits the import, export, and movement in interstate commerce, or mailing of any plant pest unless authorized by the Secretary of Agriculture; authorizes the Secretary to prohibit or restrict the import, export, or movement in interstate commerce of any plant, plant product, biological control organism, noxious weed, or means of conveyance to prevent the introduction or dissemination of a plant pest or noxious weed; and combines all or a portion of 11 acts or resolutions into one act.

The *Migratory Bird Treaty Act of 1918*, as amended (16 U.S.C. 703-712) implements various treaties and conventions between the United States and Canada, Japan, Mexico, and the former Soviet Union for the protection of migratory birds. Under the Act, taking, killing, or possessing migratory birds is unlawful.

The *Fish and Wildlife Coordination Act of 1958*, as amended (16 U.S.C. 661-667) proposes to assure that fish and wildlife resources receive equal consideration with other values during the planning of water resources development projects. The Act requires coordination with USFWS by the U.S. Department of Energy when a project is planned that may affect a body of water. It also requires coordination with the head of the state agency that administers wildlife resources in the affected state.

The *Sikes Act of 1960*, as amended (16 U.S.C. 670 et seq.) seeks to promote effectual planning, development, maintenance, and coordination of wildlife, fish, and game conservation and rehabilitation in military reservations.

The *Fish and Wildlife Conservation Act of 1980* (16 U.S.C. 2901-2911) authorizes financial and technical assistance to the states for the development, revision, and implementation of conservation plans and programs for nongame fish and wildlife.

The *Wild and Free Roaming Horse and Burro Act of 1971* (16 U.S.C. 1331) places all wild and free roaming horses and burros under the jurisdiction of the Secretary of Interior for the purpose of management and protection to achieve and maintain a thriving natural ecological balance on the public lands. The Act calls for the maintenance of current population inventories, provides for the humane destruction of sick or lame animals, and allows for adoption by qualified individuals in the case of excess populations.

*Executive Order 3226 (Amendment 1)* – This Order provides guidance to bureaus and offices within the Department of the Interior (DOI) on how to provide leadership by developing timely responses to emerging climate change issues.

*Executive Order 11644 - Use of Off-Road Vehicles on the Public Lands* (as amended by Executive Order 11989) (37 *Federal Register* 2877 [1971]), establishes policies and provides for procedures that will ensure that the use of off-road vehicles on public lands will be controlled and directed so as to protect the resources of those lands, promote the safety of all users of those lands, and minimize conflicts among the various uses of those lands.

*Executive Order 12898 – Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* (49 *Federal Register* 7629 [1994]) requires that each Federal agency consider the impacts of its programs on minority populations and low-income populations.

*Executive Order 13007 – Indian Sacred Sites* (61 *Federal Register* 26771 [1996]), requires Federal agencies to the extent practicable, permitted by law, and not clearly inconsistent with essential agency functions to accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners and avoid adversely affecting the physical integrity of such sacred sites.

*Executive Order 13287 – Preserve America* directs Federal agencies to provide leadership in preserving America's heritage by actively advancing the protection, enhancement and contemporary use of historic and paleontological properties owned by the government, emphasizing partnerships. Under this order, agencies shall cooperate with communities to increase opportunities for public benefit from, and access to, Federally owned historic and paleontological properties.

*Executive Order 13084 – Consultation and Coordination with Indian Tribal Governments* provides, in part, that each Federal agency shall establish regular and meaningful consultation and collaboration with Indian Tribal governments in the development of regulatory practices on Federal matters that significantly or uniquely affect their communities.

*Executive Order 13112 – Invasive Species* provides that no Federal agency shall authorize, fund, or carry out actions that it believes are likely to cause or promote the introduction or spread of invasive species unless, pursuant to guidelines that it has prescribed, the agency has determined and made public its determination that the benefits of such actions clearly outweigh the potential harm caused by invasive species; and that all feasible and prudent measures to minimize risk or harm will be taken in conjunction with the actions.

*Secretarial Order 3175* (incorporated into the Departmental Manual at 512 DM 2) requires that if Department of the Interior agency actions might impact Indian trust resources, the agency explicitly address those potential impacts in planning and decision documents, and the agency consult with the Tribal government whose trust resources are potentially affected by the Federal action.

*Secretarial Order 3206 – American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act* requires the U.S. Department of the Interior agencies to consult with Indian Tribes when agency actions to protect a listed species, as a result of compliance with the ESA, affect or may affect of Indian lands, Tribal trust resources, or the exercise of American Indian Tribal rights.



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## APPENDIX C: BEST MANAGEMENT PRACTICES

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### INTRODUCTION

Best Management Practices (BMPs) are those land and resource management techniques designed to maximize beneficial results and minimize negative impacts of management actions. BMPs are defined as methods, measures, or practices selected on the basis of site-specific conditions to provide the most effective, environmentally sound, and economically feasible means of managing an activity and mitigating its impacts. Interdisciplinary site-specific analysis is necessary to determine which management practices would be necessary to meet specific goals. BMPs include, but are not limited to, structural and nonstructural controls, operations, and maintenance procedures. BMPs can be applied before, during, and after pollution-producing or surface disturbing activities to reduce or eliminate the introduction of pollutants into receiving waters (40 Code of Federal Regulation 130.2(m), Environmental Protection Agency Water Quality Standards Regulation) or to prevent unnecessary or undue degradation of resources.

BMPs are identified as part of the National Environmental Policy Act process, with interdisciplinary involvement. Because the control of nonpoint sources of pollution and prevention of damage to other resources is an ongoing process, continual refinement of BMP design is necessary. This process can be described in five steps, which are: (1) selection of design of a specific BMP; (2) application of BMP; (3) monitoring; (4) evaluation; and (5) feedback. Data gathered through monitoring is evaluated and used to identify changes needed in BMP design, application, or in the monitoring program.

BMPs described in this appendix are a compilation of existing policies and guidelines and commonly-employed practices designed to assist in achieving the objectives for maintaining or minimizing water quality degradation from nonpoint sources, loss of soil productivity, providing guidelines for aesthetic conditions within watersheds, and mitigating impacts to soil, vegetation, or wildlife habitat from surface disturbing activities. BMPs are selected and implemented as necessary, based on site-specific conditions, to meet a variety of resource objectives for specific management actions. Therefore, this document does not provide an exhaustive list of BMPs, as additional BMPs or modifications may be identified to minimize the potential for negative impacts when evaluating site-specific management actions through an interdisciplinary process.

In addition, implementation and effectiveness of BMPs need to be monitored to determine whether the practices are achieving resource objectives and accomplishing desired goals. Adjustments will be made as necessary.

Each of the following BMPs are a part of the coordinated development of this Resource Management Plan and may be updated as new information becomes available to ensure objectives are met and to conform with changes in BLM regulations, policy, direction, or new scientific information. Applicants also may suggest alternate procedures that could accomplish the same result. These guidelines will apply, where appropriate, to all use authorizations, including BLM-initiated projects. Any BMP listed may be used in any program wherever it may be effective.

### DEVELOPED RECREATION

- 1) Construct recreation sites and provide appropriate sanitation facilities to minimize impacts to resource values, public health and safety, and minimize user conflicts of approved activities and access within an area as appropriate.

- 2) Minimize impacts to resource values or to enhance a recreational setting and recreation experience. Harden sites and locations subject to prolonged/repetitive concentrated recreational uses with selective placement of gravel or other porous materials and allow for dust abatement, paving, and engineered road construction.
- 3) Use public education and/or physical barriers (such as rocks, posts, vegetation) to direct or preclude uses and to minimize impacts to resource values and the quality of recreation experience.
- 4) As appropriate, employ limitations of specific activities to avoid or correct adverse impacts to resource values, public safety issues, and/or conflicts between recreational uses.
- 5) Employ land use ethics programs and techniques such as “Leave No Trace” and “Tread Lightly” programs. Use outreach efforts of such programs to lessen needs to implement more stringent regulatory measures to obtain resource protection and a quality recreation experience.

## **FIRE SUPPRESSION**

- 1) Minimize surface disturbances and avoid the use of heavy earth-moving equipment where possible, on all fire suppression and rehabilitation activities, including mop-up, except where high value resources (including lives and property), are being protected.
- 2) Install waterbars and seed all constructed firelines with native or adapted nonnative species as appropriate and in accordance with the BLM Emergency Fire Rehabilitation Handbook (BLM 1999).
- 3) Avoid dropping fire retardant detrimental to aquatic communities on streams, lakes, ponds and in riparian/wetland areas.
- 4) The location and construction of handlines should result in minimal surface disturbance while effectively controlling the fire. Hand crews should locate lines to take full advantage of existing land features that represent natural fire barriers. Whenever possible, handlines should follow the contour of the slope to protect the soil, provide sufficient residual vegetation to capture and retain sediment, and maintain site productivity.
- 5) Suppression in riparian areas should be by hand crews when possible.

## **FOREST MANAGEMENT**

- 1) Design harvest units and forest health treatments to blend with natural terrain.
- 2) Utilize silvicultural regeneration systems that are most appropriate for treatment objectives. Utilize uneven-aged silviculture for most treatments; however, even-aged systems may be appropriate in situations to accomplish insect and disease control, aspen regeneration, or other site-specific objectives. Consider a range of maximum stand density index by species to accomplish forest health goals.
- 3) When soils or road surfaces become saturated to a depth of 3 inches, BLM-authorized activities, such as log yarding and hauling, should be limited or cease unless otherwise approved by the authorized officer.
- 4) Scatter unmerchantable material (tops, limbs, etc.) in cutting units and treatment areas, consistent with fuel loading limitations.
- 5) Locate skid trails on upper slope positions, as far as possible from surface water. Avoid skidding across drainage bottoms or creating conditions that concentrate and channelize surface flow.

- 6) Use directional felling, when applicable, to minimize skidding distance and locate skid trails as far as possible from sensitive areas.
- 7) Install waterbars and apply native seed, when available, to skid trails and landings prior to temporary seasonal closures and following harvest operations. Consider ripping or subsoiling on skid trails and abandoned haul roads to reduce compaction where soil and slope conditions permit.
- 8) Locate landings away from surface water. Design landings to minimize disturbance consistent with safety and efficiency of operation.
- 9) Use low pressure grapple equipment, if possible, when piling slash.
- 10) Conduct forested land treatments when soil surfaces are either frozen, dry, or have adequate snowpack to minimize impacts to soil and water resources.
- 11) Prepare pre-harvest plan for efficient forest and site harvesting and road systems. Use topographic maps, aerial photographs, soil surveys, and field trips to determine site conditions. Use global positioning system to geolocate field data for incorporation into the geographic information system. Plan should clearly outline BMPs to be followed before, during, and after harvest; identify area to be harvested; locate special areas of protection (wetlands and streamside vegetation); allow for proper timing of activities; describe management measures for road layout, design, construction, maintenance, harvesting methods, and forest regeneration. As part of plan:
  - Consider natural drainage channels; threatened, endangered, and special status species habitat; topography; and soil types in determining boundaries of timber harvest activities, location and design of roads and landings, selection of harvesting method, reforestation techniques.
  - Avoid sensitive areas such as wetlands and important wildlife habitats. If avoidance is not possible, choose harvest practices with least serious effects or schedule to avoid areas during critical time periods (e.g., nesting or breeding seasons). Where access to adjacent land would allow for more efficient road system or avoidance, consider working with landowner to obtain an easement.
  - Time construction and harvest activities to take advantage of seasonal conditions. When possible, avoid construction during heavy rains or freeze/thaw conditions to avoid potential for runoff and erosion.
- 12) Conduct rapid revegetation of areas disturbed by harvesting operations or road construction to reduce erosion and sedimentation. Equipment and site preparation methods must consider site topography, soil type, natural drainage, amount of rainfall, and kind of vegetation. Site preparation may include:
  - Removal of logging roads, landings, and drainage structures.
  - Mechanical activities to chop, root rake, disk and blade the soil in the disturbed areas in preparation for planting.
  - Prescribed fires to reduce logging residue and undesirable trees and vegetation.
- 13) Establish vegetative cover planting on erodible areas that were cultivated in the fall but will not be planted until spring.
- 14) Stabilize steep slopes prior to planting.
- 15) Use native grasses or other plant species to reseed bare-erodible areas; do not introduce invasive non-native plants under any circumstance.
- 16) Windrow logging debris along contours, in gullies, and on skid trails to stabilize these areas.

- 17) Remove unneeded logging roads and skid trails immediately. Do not wait for entire harvest operation to be completed.
- 18) Smooth, grade, and revegetate landings and, where appropriate, main haul roads.
- 19) Remove temporary drainage structures and clean permanent drainage structures.
- 20) Minimize the use and maximize the benefit of chemicals through skilled and appropriate management and application. To ensure safe use of chemicals, consider the following:
  - Transportation, handling, storage, application and disposal of pesticides, fire retardants, and fertilizers must comply with applicable local, state and federal regulations.
  - Monitor weather conditions such as rain, wind speed, temperature and humidity during application to prevent drift, volatilization, and surface water runoff.
  - Do not apply chemicals in streamside management zones or wetlands.
  - Note that fertilizers and fire retardants contain high amounts of both nitrogen and phosphorus and are easily transported overland and deposited in streams along with the sediment. These compounds can accelerate eutrophication (a process whereby water bodies are choked by overabundant plant life and algae due to higher levels of nutrients such as nitrogen and phosphorus).

## **FOREST WETLANDS**

- 1) Establish and maintain a streamside management zone (SMZ) along surface waters to buffer against detrimental changes in the temperature regime of the water body, provide bank stability, provide a filter to keep sediment and pollutants out of the stream, and withstand wind damage. The SMZ should be sufficiently wide, and should include a sufficient number of canopy species. The width should be based on erosiveness of the soil, steepness of bank slopes, proximity to municipal watersheds, protection of adjacent wetlands, and sensitivity of fish and wildlife habitat and other critical areas. The SMZ should incorporate nearby wetlands.
- 2) Limit disturbances in SMZs by the following methods: restrict road construction except at designated stream or wetland crossings; operate vehicles only on roads; do not deposit road construction material, waste timber, or slash into SMZs; do not handle, store, apply, or dispose of hazardous chemicals, fertilizers, or pesticides in SMZs. Timber harvesting should be conducted only selectively if at all, and should consider following practices:
  - Retain the appropriate diversity and size of tree and shrub species.
  - Protect and retain trees and shrubs and snags that are below harvest quality.
  - Retain bank edge trees for stream channel stability and to shade stream.
  - Maintain sufficient ground cover to trap sediment.
  - Immediately remove any logging debris that enters the stream channel.
- 3) Use ultrawide, high-flotation tires on logging trucks and skidders to reduce soil compaction and erosion.
- 4) Suspend or limit forest operations when soils become saturated.
- 5) Maintain natural contour of the site and take action to ensure that forestry activities do not immediately or gradually convert the wetland to dry land.
- 6) Where roads are constructed, provide cross drainage to maintain natural surface and subsurface flow.

- 7) Construct road fills only when absolutely necessary. Use gravel or crushed rock as fill to provide for water movement.

## **INVASIVE/NOXIOUS WEEDS MANAGEMENT**

- 1) All surface disturbing equipment should be inspected and cleaned prior to coming onto public lands. This is especially important on vehicles from out of state or if coming from a weed infested area.
- 2) If fill dirt or gravel is brought onto public lands, the source must be noxious weed free.
- 3) Construction sites should be monitored for the life of the project for the presence of Invasive/Noxious weeds (includes maintenance and construction activities). If weeds are found, the Socorro Field Office will be notified and it will determine the best method for the control of the particular weed species.
- 4) All seed shall be certified noxious weed free. Areas will be monitored to determine the success of re-vegetation, the presents of invasive/noxious weeds, and will be reseeded if necessary.
- 5) Consider livestock quarantine, removal, or timing limitations in invasive/noxious weed-infested areas.
- 6) All seed, hay, straw, mulch, or other vegetation material transported and used on public land for site stability, rehabilitation, or project facilitation shall be certified noxious weed free of all reproductive parts upon the passage of a weed free law in the state of New Mexico. All baled feed, pelletized feed, and grain used to feed livestock shall also be certified as free of noxious weed seed.
- 7) It is recommended that all vehicles, including off-road and all-terrain, traveling in or out of weed-infested areas should clean their equipment before and after use on public land.

## **LIVESTOCK GRAZING MANAGEMENT**

All rangeland projects and vegetative land treatments will meet current BLM policy and objectives of this Resource Management Plan. Rangeland improvements projects and vegetative treatments are constructed as a portion of adaptive management to reduce resource conflicts and to achieve multiple-use objectives. They have been standardized over time to mitigate impacts and will be adhered to in the construction and maintenance of rangeland projects within the planning area. Rangeland improvements are structures, facilities and practices to improve or facilitate the grazing management and improve the resources. Grazing Management Practices are developed through consultation on an allotment specific objectives and progress toward multiple use objectives and sustainability of resources. Grazing Management Practices may include herding, grazing and deferment periods, use of supplement, change of class of livestock and increase or decrease of livestock numbers.

## **MINING**

- 1) Reclaim all disturbed surface areas promptly, performing concurrent reclamation as necessary, and minimize the total amount of all surface disturbance.
- 2) All surface soil should be stripped prior to conducting operations, stockpiled, and reapplied during reclamation, regardless of soil quality. Minimize the length of time soil remains in stockpiles and the depth or thickness of stockpiles. When slopes on topsoil stockpiles exceed five percent, a berm or trench should be constructed below the stockpile to prevent sediment transport offsite.

- 3) Strip and separate soil surface horizons where feasible and reapply in proper sequence during reclamation.
- 4) Locate soil stockpiles and waste rock disposal areas away from surface water to minimize off-site drainage effects.
- 5) Establish vegetation cover on soil stockpiles that are to be in place longer than one year.
- 6) Construct and rehabilitate temporary roads to minimize total surface disturbance, consistent with intended use.
- 7) Consider temporary measures such as silt fences, straw bales, or mulching to trap sediment in sensitive areas until reclaimed areas are stabilized with vegetation.
- 8) Reshape to the approximate original contour all areas to be permanently reclaimed, providing for proper surface drainage.
- 9) Leave reclaimed surfaces in a roughened condition following soil application.
- 10) Complete reclamation and seeding during the fall if possible.

## **OIL AND GAS ACTIVITIES**

- 1) Plans of Development (PODs) are encouraged to minimize unnecessary disturbance. Field development plans should address sensitive area avoidance or mitigation, potential road, utility, and well locations, road classes, and plans for interim and final reclamation.
- 2) Dual completion, re-completion, commingling (both downhole and at the surface), the drilling of multiple wells from a single location, and centralized tank batteries will be encouraged and permitted in order to reduce the number of new well pads and consequent surface disturbance. This will reduce impacts to soil and vegetation, reduce air impacts caused by dust, reduce habitat fragmentation, and offer less opportunity for the spread of noxious weeds.
- 3) Operators will be encouraged to unitize in areas of dense development to increase management efficiency and facilitate operations in sensitive areas. Unitization is the process by which multiple lease holders in a geographic area share facilities so as to reduce surface disturbance caused by multiple duplicate facilities such as pipelines and compressor stations.
- 4) Reduce the size of the well pad whenever possible, without compromising safety.
- 5) Remote monitoring of wells and related production equipment is encouraged to reduce wildlife disturbance and road deterioration.
- 6) Pipelines associated with oil and gas activities will follow existing roads and rights-of-way corridors where possible to minimize surface disturbance.
- 7) The burial of pipelines associated with oil and gas exploration, development, production, and transportation is preferred. Pipelines greater than 4 inches in nominal diameter, all injection lines, and gas lines with a pressure greater than 125 pounds per square inch must be buried and constructed of steel. The use of plastic pipe will be approved by the authorized officer on a case-by-case basis. A waiver of the requirement to bury pipelines will be considered in the following situations:
  - The temporary (one year or less) surface installation of plastic pipelines, after considering the length of the pipeline, its proposed location, the potential hazards present, the characteristics of the pipe regarding deterioration, the American Society for Testing and Materials or similar specifications for the pipe, the intended use of the pipeline, and other appropriate factors
  - Where rock outcrops at the surface make the burial of pipeline impractical, such as when unreasonable and unreclaimable surface disturbance would result. Where the pipeline is

exposed, painting may be required in accordance with the painting policy for visual resource management areas and Notice to Lessees 87-1, New Mexico. Waiver of the requirement for painting will be considered on a case-by-case basis.

- Where the surface ownership along the pipeline route is mixed, and the majority of surface ownership is not public. In those cases, the installation of pipelines on public land will conform to the practice to be employed on the remainder of the pipeline, unless special resource management concerns dictate strict adherence to this policy.
- 8) Minimize noise in sensitive wildlife habitats. Consider using noise reduction mufflers, earthen berms, walls, sheds, and/or distance to reduce sound levels. Consider requiring vent stack/exhaust stack coverings on heater treater/separator units to prevent wildlife from entering.
  - 9) All production related pits and tanks, regardless of size, would be covered and fenced to exclude wildlife.

## **PRELIMINARY INVESTIGATIONS**

Activities occurring during preliminary investigations may include remote sensing; mapping of rock outcrops and seeps (either of which result in little or no surface disturbance); and seismic, gravity, and magnetic surveys.

A lease is not required to conduct such preliminary investigations. However, the geophysical operator is required to file a completed Form 3150-4, "Notice of Intent to Conduct Oil and Gas Exploration Operations" for all operations on public lands.

In general, the BLM requires an examination of resource values and development of appropriate surface protection and reclamation measures prior to the geophysical contractor beginning surface-disturbing activities associated with preliminary investigations. The BLM will solicit involvement from public land users (e.g., grazing allottees) to develop site-specific protection measures and reclamation specifications. Compliance monitoring should occur during and after seismic exploration activities when or if necessary. Compliance inspections during the operation ensure that requirements and guidelines are being followed. Compliance inspections upon completion of work ensure that the lines are clean and drill holes are plugged properly.

The frequency of authorized seismic exploration will be dependent upon resource conditions and seasonal restrictions (timing limitations) that may be imposed to reduce conflicts with watershed conditions, wildlife, and hunting. Management practices specific to wildlife and vegetation resources include the following:

- Prior to surveying/flagging routes for geophysical surveys or other preliminary activities, the project area shall be surveyed for raptor nests. Surveys will be conducted by professional biologists approved by the Authorized Officer. The Universal Transmercator grid locations of all raptor nests will be reported to the Authorized Officer. All raptor nests will be avoided by the required distances described under the Well Sites section. A "raptor nest" is defined as any raptor or corvid nest.
- In areas that constitute occupied or potential Aplomado Falcon habitat, a protocol survey for this species will be conducted along with the general raptor nest survey described above, prior to surveying/flagging lines.
- During operations at any time, large (greater than 6 feet in height) trees or shrubs containing or capable of containing a raptor nest will be avoided by vehicular traffic or other activities likely to destroy them.

- In areas that allow for off-road travel, minimize the off-road impact of large vehicles. Use wide, flat-tread, balloon tires (especially on seismic thumper trucks) where possible. Use all-terrain vehicles rather than large vehicles where possible.
- Occupied habitat for special status species will be avoided in a manner similar to surface use requirements (avoid occupied habitat up to 0.5 mile) unless impacts adequately mitigated.

## **PRESCRIBED BURNING**

- 1) To protect soil productivity, burning should be conducted, if possible, under conditions when a low intensity burn can accomplish stated objectives. Burn only when conditions of organic surface or duff layer have adequate moisture to minimize effects to the physical and chemical properties of the soil. When possible, maximize the retention of the organic surface or duff layer.
- 2) Slash should not be piled and burned within riparian/wetland areas. If riparian/wetland areas are within or adjacent to the prescribed burn unit, piles should be firelined or scattered prior to burning.
- 3) When preparing the unit for burning, avoid piling concentrations of large logs and stumps; pile small material (3 to 8 inches diameter). Slash piles should be burned when soil and duff moisture are adequate to reduce potential damage to soil resources.
- 4) All fire management activities will be subject to the BMP's identified in the *Decision Record and Resource Management Plan Amendment for Fire and Fuels Management on Public Land in New Mexico and Texas*, U.S. Department of Interior, BLM New Mexico State Office, September 2004. BMPs are identified in Chapter 2 of that document<sup>4</sup>.

## **RENEWABLE ENERGY**

- 1) All renewable wind energy projects will be subject to the BMP's identified in the Final Programmatic Environmental Impact Statement on Wind Energy Development on BLM-Administered Lands in the Western United States, U.S. Department of Interior, BLM, June 2005. BMP's are identified in Section 2.2.3.2 of that document<sup>5</sup>.

## **RIGHTS-OF-WAY AND UTILITY CORRIDORS**

- 1) Rights-of-way and utility corridors should use areas adjoining or adjacent to previously disturbed areas whenever possible, rather than traverse undisturbed vegetation communities.
- 2) Waterbars or dikes should be constructed on all of the rights-of-way and utility corridors, and across the full width of the disturbed area, as directed by the authorized officer.
- 3) Disturbed areas within road rights-of-way and utility corridors should be stabilized by vegetation practices designed to hold soil in place and minimize erosion.
- 4) Sediment barriers should be constructed when needed to slow runoff, allow deposition of sediment, and prevent transport from the site. Straining or filtration mechanisms may also be employed for the removal of sediment from runoff.

<sup>4</sup> At the time of printing, this document can be found online at: [http://www.blm.gov/nm/st/en/prog/planning.1.html#new\\_mexico](http://www.blm.gov/nm/st/en/prog/planning.1.html#new_mexico)

<sup>5</sup> At the time of printing, this document can be found online at: <http://www.windeis.onl.gov/>



## ROAD DESIGN AND MAINTENANCE

- 1) Design roads to minimize total disturbance, to conform with topography, and to minimize disruption of natural drainage patterns.
- 2) Base road design criteria and standards on road management objectives such as traffic requirements of the proposed activity and the overall transportation objectives, and minimizing damage to the environment.
- 3) Locate roads on stable terrain such as ridgetops, natural benches, and flatter transitional slopes near ridges and valley bottoms and moderate sideslopes and away from slumps, slide prone areas, concave slopes, clay beds, and where rock layers dip parallel to the slope. Locate roads on well-drained soil types; avoid wet areas.
- 4) Construct cut and fill slopes to be approximately 3(h):1(v) or flatter where feasible. Locate roads to minimize heights of cutbanks. Avoid high, steeply sloping cutbanks in highly fractured bedrock.
- 5) Avoid head walls, midslope locations on steep, unstable slopes, fragile soils, seeps, old landslides, sideslopes in excess of 70 percent, and areas where the geologic bedding planes or weathering surfaces are inclined with the slope. Implement extra mitigation measures when these areas cannot be avoided.
- 6) Construct roads for surface drainage by using outslopes, crowns, grade changes, drain dips, waterbars and/or insloping to ditches as appropriate.
- 7) Sloping the road base to the outside edge for surface drainage is normally recommended for local spurs or minor collector roads where traffic volume is low and lower traffic speeds are anticipated. This is also recommended in situations where long intervals between maintenance will occur and where minimum excavation is wanted. Out-sloping is not recommended on steep slopes. Sloping the road base to the inside edge is an acceptable practice on roads with steep sideslopes and where the underlying soil formation is very rocky and not subject to appreciable erosion or failure.
- 8) Crowning and ditching are recommended for arterial and collector roads where traffic volume, speed, intensity and user comfort are considerations. Recommended gradients range from 0 to 15 percent where crowning and ditching may be applied, as long as adequate drainage away from the road surface and ditch lines is maintained.
- 9) Minimize excavation when constructing roads through the use of balanced earthwork, narrowing road widths, and end hauling where sideslopes are between 50 and 70 percent.
- 10) If possible, construct roads when soils are dry and not frozen. When soils or road surfaces become saturated to a depth of 3 inches, BLM-authorized activities should be limited or cease unless otherwise approved by the authorized officer.
- 11) Consider improving inadequately surfaced roads that are to be left open to public traffic during wet weather with gravel or pavement to minimize sediment production and maximize safety.
- 12) Retain vegetation on cut slopes unless it poses a safety hazard or restricts maintenance activities. Roadside brushing of vegetation should be done in a way that prevents disturbance to root systems and visual intrusions (i.e., avoid using excavators for brushing).
- 13) Retain adequate vegetation between roads and streams to filter runoff caused by roads.
- 14) Avoid riparian/wetland areas where feasible; locate in these areas only if the roads do not interfere with the attainment of proper functioning condition and riparian management objectives.

- 15) Minimize the number of unimproved stream crossings. When a culvert or bridge is not feasible, locate drive-through (low water crossings) on stable rock portions of the drainage channel. Harden crossings with the addition of rock and gravel if necessary. Use angular rock if available.
- 16) Locate roads and limit activities of mechanized equipment within stream channels to minimize their influence on riparian areas. When stream crossing is necessary, design the approach and crossing perpendicular to the channel where practical. Locate the crossing where the channel is well defined, unobstructed, and straight.
- 17) Avoid placing fill material in floodplain unless the material is large enough to remain in place during flood events.
- 18) Use drainage dips instead of culverts on roads where gradients would not present a safety issue. Locate drainage dips in such a way so water would not accumulate or where outside berms prevent drainage from the roadway. Locate and design drainage dips immediately updrain of stream crossings and provide buffer areas and catchment basins to prevent sediment from entering the stream.
- 19) Construct catchment basins, brush windrows, and culverts in a way to minimize sediment transport from road surfaces to stream channels. Install culverts in natural drainage channels in a way to conform with the natural streambed gradients to outlets that discharge onto rocky or hardened protected areas.
- 20) Design and locate water crossing structures in natural drainage channels to accommodate adequate fish passage, provide for minimum impacts to water quality, and capable of handling a 100-year event for runoff and floodwaters.
- 21) Use culverts that pass, at a minimum, a 50-year storm event and/or have a minimum diameter of 24 inches for permanent stream crossings and a minimum diameter of 18 inches for road cross drains.
- 22) Replace undersized culverts and repair or replace damaged culverts and downspouts. Provide energy dissipaters at culvert outlets or drainage dips.
- 23) Locate culverts or drainage dips in such a manner as to avoid discharge onto unstable terrain such as head walls or slumps. Provide adequate spacing to avoid accumulation of water in ditches or road surfaces. Culverts should be placed on solid ground to avoid road failures.
- 24) Proper sized aggregate and riprap should be used during culvert construction. Place riprap at culvert entrance to streamline water flow and reduce erosion.
- 25) Establish adapted vegetation on all cuts and fill immediately following road construction and maintenance.
- 26) Remove berms from the downslope side of roads, consistent with safety considerations.
- 27) Leave abandoned roads in a condition that provides adequate drainage without further maintenance. Close abandoned roads to traffic. Physically obstruct the road with gates, large berms, trenches, logs, stumps, or rock boulders as necessary to accomplish permanent closure.
- 28) Abandon and rehabilitate roads no longer needed. Leave these roads in a condition that provides adequate drainage. Remove culverts.
- 29) When plowing snow for winter use of roads, provide breaks in snow berms to allow for road drainage. Avoid plowing snow into streams. Plow snow only on existing roads.
- 30) Maintenance should be performed to conserve existing surface material, retain the original crowned or out-sloped, self-draining cross section, prevent or remove rutting berms (except those designed for slope protection) and other irregularities that retard normal surface runoff. Avoid

wasting loose ditch or surface material over the shoulder where it can cause stream sedimentation or weaken slump-prone areas. Avoid undercutting back slopes.

- 31) Do not disturb the toe of cut slopes while pulling ditches or grading roads. Avoid sidecasting road material into streams.
- 32) Grade roads only as necessary. Maintain drain dips, waterbars, road crown, in-sloping and out-sloping, as appropriate, during road maintenance.
- 33) Maintain roads in special management areas according to special management area guidance. Generally, retain roads within existing disturbed areas and side cast material away from the special management area.
- 34) When landslides occur, save all soil and material usable for reclamation or stockpile for future reclamation needs. Avoid side casting of slide material where it can damage, overload, and saturate embankments, or flow into down-slope drainage courses. Reestablish vegetation as needed in areas where vegetation has been destroyed due to side casting.
- 35) Strip and stockpile topsoil ahead of construction of new roads, if feasible. Reapply soil to cut and fill slopes prior to revegetation.

## **SURFACE-DISTURBING ACTIVITIES**

- 1) Special design and reclamation measures may be required to protect scenic and natural landscape values. This may include transplanting trees and shrubs, mulching and fertilizing disturbed areas, removal of surfacing material, imprinting, irrigation, use of low profile permanent facilities, and painting to minimize visual contrasts. Surface-disturbing activities may be moved to avoid sensitive areas or to reduce the visual effects of the proposal.
- 2) Above ground facilities requiring painting should be designed to blend in with the surrounding environment.
- 3) Surface disturbance will be restricted in areas that have special topographic (steep or broken terrain and/or benches) and soil concerns in order to reduce impacts caused by soil erosion and habitat disturbance. Development in these areas will be considered on a case-by-case basis and will contain site-specific mitigation designed to prevent increased sediment from being transported into drainages and to prevent fragmentation of areas determined to provide important wildlife habitat.
- 4) In areas that allow for off-road travel, minimize the off-road impact of large vehicles. Use wide, flat-tread, balloon tires (especially on seismic thumper trucks) where possible. Use all-terrain vehicles rather than large vehicles where possible.
- 5) Only excavate topsoil and subsoil where it is absolutely necessary. Consider brush-beating, mowing, and/or parking on vegetation for surface disturbing activities.
- 6) Disturbed areas should be contoured to blend with the natural topography. Blending is defined as reducing form, line, and color contrast associated with the surface disturbance. Disturbance should be contoured to match the original topography, where matching is defined as reproducing the original topography and eliminating form, line, and color caused by the disturbance as much as possible.
- 7) Interim reclamation should be implemented concurrent with construction and site operations to the fullest extent possible. Final reclamation actions shall be initiated within 6 months of the termination of operations unless otherwise approved in writing by the authorized officer.

- 8) Fill material should be pushed into cut areas and up over back slopes. Depressions should not be left that would trap water or form ponds unless the Authorized Officer has determined that dips or depressions may be used to assist reclamation efforts and seed propagation.
- 9) Reclaimed soil will be free of contaminants and will have adequate depth, texture, and structure to provide for successful vegetation reclamation. Vegetation reclamation will be considered successful when healthy, mature perennials are established with a composition and density that closely approximates the surrounding vegetation as prescribed by the BLM, and the reclamation area is free of noxious weeds.
- 10) If necessary after reclamation, a BLM-standard barbed wire fence will be constructed to exclude livestock for a minimum of at least two successful growing seasons.
- 11) The project proponent will include a restoration plan for habitat of special status species when the BLM determines it is appropriate. The restoration plan will be developed in consultation with, and approved by, the BLM.
- 12) Additional reclamation measures may be required based on the conditions existing at the time of abandonment.
- 13) Oil and fuel for equipment and vehicles must be carefully handled and disposed to prevent soil or water contamination.
- 14) Develop a spill contingency plan which identifies all actions to be taken in the event of a chemical spill including phone numbers for Federal, State, and local agencies which must be notified.
- 15) Time activities to avoid wet periods.

## VISUAL RESOURCE MANAGEMENT

BMPs to address visual resource concerns have been incorporated into the above resource discussions, as appropriate. Additional BMPs dealing with visual resource management considerations in oil and gas development can be found on the BLM website<sup>6</sup>. BMPs dealing with visual resource management considerations in general are also available online<sup>7</sup>.

## WILDLIFE AND RIPARIAN HABITAT

- 1) Prior to the initiation of a surface-disturbing activity, the project area will be surveyed for raptor nests or active prairie dog towns. Surveys will be conducted by professional biologists approved by the Authorized Officer. All raptor nests and active prairie dog towns will be avoided by the distances and seasonal periods listed below.

Species	Minimum Distance	Season
Aplomado Falcon	0.5 mile	January 1-July 31
Eagle	0.5 mile	February 1-July 15
Ferruginous Hawk	0.5 mile	February 1-July 15
Prairie Falcon	0.5 mile	March 1-August 1

<sup>6</sup> At the time of printing, the current web address is: [http://www.blm.gov/wo/st/en/prog/energy/oil\\_and\\_gas/best\\_management\\_practices.html](http://www.blm.gov/wo/st/en/prog/energy/oil_and_gas/best_management_practices.html)

<sup>7</sup> At the time of printing, the web address is: <http://www.blm.gov/nstc/VRM>

All other raptor species	0.5 mile	during observed nest establishment through fledgling
Black-Tailed Prairie Dog	0.25 mile	January 1-June 15
Gunnison Prairie Dog	0.25 mile	February 15-June 15

Long duration land use activities will not be allowed to occur within the species-specific spatial buffer zone of active nests or occupied prairie dog towns listed above. Short duration activities will be avoided within the species-specific spatial buffer zones during the dates listed above. Short duration activities will be limited to the spatial buffer zone outside of the boundary of the occupied prairie dog town and will not occur within the occupied town. All other raptor species nests will be avoided by the spatial buffer zone only during the period listed above, regardless of the duration of the activity. Before land use activities can commence a raptor and prairie dog survey must be completed.

A short duration activity is defined as an activity, which would begin outside of a given breeding season and end prior to initiation of a given breeding season. A long duration activity is defined as an activity which would continue into or beyond a given nesting/breeding season. An active nest is defined as any nest that has been occupied in the last seven years. A nest will be determined active or inactive by the Authorized Officer. Surveys will be conducted by professional biologists approved by the Authorized Officer.

- 2) Ensure that all fences are constructed to BLM Socorro Field Office Fence Specifications to mitigate impacts to wildlife.
- 3) Ensure that escape wildlife escape ramps are installed and maintained on all applicable water development projects on public lands (see BLM Manual Handbook H-1741-2 Water Developments November 6, 1990).
- 4) Construct all new water improvements so that they are located a minimum of 30 meters away from fences or other structures likely to pose a collision threat to bats.
- 5) Surface disturbance will not be allowed within up to 0.5 mile of the outer edge of 100-year floodplains, playas, all artificial water developments (tanks, guzzlers, etc.), and riparian habitat (seeps, arroyos, etc.). Exceptions to this requirement will be considered on a case-by case basis.
- 6) In areas where habitat and/or rangeland enhancement projects have been implemented, with the exception of large landscape projects (prescribed burns, chemical treatments, and mechanical treatments), adverse impacts to the landscape will be avoided by minimizing or excluding certain surface-disturbing activities that may degrade the objectives or intent of the project. Exceptions to this requirement will be considered on a case-by-case basis.
- 7) In all crucial calving, lambing, kidding, and fawning areas and wintering ranges, all surface-disturbing activities, permanent or temporary, will be avoided during the appropriate time periods.
- 8) Prior to initiating geophysical or other preliminary surveys during the raptor breeding season, the area will be surveyed for the presence of raptor nests.
- 9) In siting facilities, the following measures must be followed:
  - In areas that constitute occupied or potential Aplomado Falcon habitat, a protocol survey for this species will be conducted along with the above general raptor nest survey prior to surveying/flagging locations.
  - During operations at any time, all habitat features (pinnacles, cliffs, ledges, caves, and trees and shrubs greater than six feet in height) containing or capable of containing raptor nests or bat habitat will be avoided by vehicular traffic or other surface-disturbing activities likely to remove or destroy them unless authorized by BLM authorized officer.

- Tree and vegetation clearing will be limited to the minimum area required, except where vegetative objectives have been established for elimination or reduction in vegetative density.
- Construction activities will be timed to avoid wet periods.
- Powerlines will be constructed to standards outlined in the most recent version of “Suggested Practices for Raptor Protection on Power Lines” published by the Edison Electric Institute/Raptor Research Foundation, unless otherwise agreed to by the Authorized Officer. The holder is responsible for demonstrating that power pole designs not meeting these standards are raptor safe. Such proof will be provided by a raptor expert approved by the Authorized Officer. The BLM reserves the right to require modifications or additions to powerline structures constructed under this authorization, should they be necessary to ensure the safety of large perching birds. The modifications and/or additions will be made by the holder without liability or expense to the United States.
- All equipment installed on Federal lands will be constructed to prevent birds and bats from entering them and, to the extent practical, to discourage perching and nesting.
- Open top tanks, reserve pits, disposal pits, or other open pits will be required to be equipped to deter entry by birds, bats, or other wildlife.

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## **APPENDIX D: MONITORING**

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Monitoring is the process of collecting data and information in order to determine whether or not desired outcomes (expressed as goals and objectives in the land use plan) are being met (or progress is being made toward meeting them) as the allowable uses and management actions are being implemented. This appendix describes the process for effectiveness monitoring that will be carried out for each resource or program to determine if the actions described in the Resource Management Plan are meeting or moving toward management goals.

### **AIR QUALITY AND CLIMATE CHANGE**

No specific air monitoring is planned. The Socorro Field Office will ensure that authorizations and management activities comply with Federal, State, and local air quality regulations, requirements, and implementation plans. Ground cover will be protected in order to minimize wind erosion of soils..

### **CAVES AND KARST RESOURCES**

The purpose of a monitoring program for Cave and Karst areas is to facilitate improved management through monitoring and research and to protect natural and scenic values while allowing for recreation, and educational and scientific uses where such use does not conflict with protecting unique values.

- Conduct inventories and long-term general and specific ecological studies relating to the requirements of cave habitats for special status species.
- Determine population trends, threats, and habitat change by monitoring populations of all special status species using cave or karst habitats.
- Gather baseline information on habitat use by all species.
- Establish photo monitoring points and periodically take photos to record any changes.
- Use Limit of Acceptable Change techniques to monitor impacts from visitor use.
- Employ visitor surveys to determine visitor use, visitor satisfaction with their experience, and effectiveness of any interpretation or educational programs and facilities.
- Monitor the effects of any constructed projects or developments on wildlife and habitat use.

### **CULTURAL RESOURCES**

There are two kinds of cultural resource site monitoring: one consists of field examination to assess whether any impacts have occurred resulting from Section 106 undertakings, and the other is to assess any natural or human-caused impacts that are not related to authorized Federal undertakings. Section 106 monitoring will be conducted when deemed appropriate by the Resource Area archaeologist or the Socorro Field Office Manager (i.e., when project design constraints do not allow for standard buffers for site avoidance).

Non-Section 106 monitoring of BLM-administered cultural resources in the Socorro Field Office area of jurisdiction will be conducted as staffing levels and workload permit, with a minimum of 10 site visits per year. Sites for non-Section 106 monitoring will be prioritized as follows:

1. National Register eligible sites reported to be undergoing effects from natural or human caused phenomena.
2. Sites of outstanding significance, particularly if they are considered vulnerable or at-risk such as sites in areas of intense recreation use and sites in urban interface areas.

3. Sites chosen based on accessibility to staff or volunteers. For example, sites near a current project area.

## **FIRE MANAGEMENT**

Monitoring studies would be encouraged on all emergency fire rehabilitation projects to determine whether emergency fire rehabilitation objectives were met.

Monitoring would be implemented on all projects that employ new techniques, seed mixes, or rehabilitation methods. Emergency fire rehabilitation funds may be used to fund monitoring studies for up to three growing seasons following fire control.

Pre-fire condition and post-fire effects would be determined by monitoring plant community composition and trend in burn areas to determine natural recovery, responses from seed planting, and weed and cheatgrass invasion. Monitoring methods would include establishing photo points, density, cover, frequency plots (pre- and post-burn), and ocular estimates.

## **FORESTRY AND WOODLANDS**

The forestry program will be monitored prior to and following silvicultural treatments utilizing standard forest stand exams to determine forest or woodland species, trees per acre, size classes, and overall forest or woodland health. Permanent plots will be established, including photo points. Line transects will also be utilized to determine cover and composition changes over time. These plots will be read on a schedule that reflects condition of the site and goals for future desired condition of the vegetation.

The vegetative sales program would be monitored prior to and following establishment of vegetative sales collection sites using permanent plots established for photo points. These plots will be read on a schedule that reflects condition of the site, to ensure no undue resource damage has occurred from harvesting plant materials.

For both the forestry and vegetative sales programs, regular site visits throughout the year would be a part of the monitoring program to ensure signs are in place, the public is properly permitted, and the public is not entering areas under wet conditions.

## **LAND AND REALTY**

All authorized rights-of-way, permits, and leases including recreational and public proposes authorizations will be monitored by both the holder and the Authorized Officer. The holder will be responsible for complying with the terms and conditions of the grant and 43 Code of Federal Regulations (CFR) 2805.12 to ensure that public health, safety, and welfare are protected, and that the right-of-way, permit, or lease is in accordance with the State and local laws and that the terms and conditions of the authorization are being followed. The monitoring may involve but not be limited to conducting repetitive inspections, data gathering, or technical investigation. The frequency and type will depend on the resource values at risk, the holder's past performance record, and the ability to obtain monitoring services.

The Authorized Officer will periodically conduct inspections of the area to ensure the protection of resources and that the management objectives in the land use plan are being met. These inspections will also confirm the holder is in compliance with the terms and conditions of the authorization, rental fees are being properly calculated, and the protection of the public health and safety is not being jeopardized. The Authorized Officer may conduct joint inspections with the holder. Written documentation of the inspections will be file in the casefile.



Prior to surface-disturbing activities, the Authorized Office may require the holder not to proceed until the Authorized Officer has issued written notice to proceed. The Authorized Officer may conduct inspections during construction. The frequency and type of inspection will be depend on the resource values at risk, type of activities involved with the authorization, and the holder's previous performance record.

Each Recreation and Public Purpose Act lease and patent will periodically receive an examination as to the terms, plan of development, timetable for construction plan of management, etc., in order to comply with the law. According to the BLM Handbook H-2740-1 Chapter 8, compliance checks should be scheduled at a minimum at intervals of five years after a lease or patent has been issued. Additional checks may be required in circumstances where the plan of development shows completion or substantial development of the proposed project in less than five years, the lease specifies a nonuse period shorter than five years, or receipt of a complaint alleging lands are being used for a purpose not authorized in the lease or patent. The compliance checks may be conducted by the holder, a third-party contractor, or other regulatory entity.

## **MINERALS**

Monitoring of activities on mining claims will be conducted to ensure compliance with the 43 CFR 3802/3809 regulations. These regulations provide for locatable mineral activities on public lands while preventing unnecessary or undue degradation, and provide for reclamation of disturbed areas and coordination with State agencies. BLM policy establishes minimum inspection frequencies for mining operations as follows: quarterly inspections are required for all operations using cyanide, and biannual inspections are required for all other active operations. Operations in sensitive areas or operations with a high potential for greater than usual impacts are inspected more often.

For fluid mineral leases, inspections will be conducted to determine compliance with applicable laws, regulations, conditions of leases, and the requirements of approved exploration and development plans. Where mineral production is occurring, inspections will ensure (1) an accurate accounting of materials removed; (2) proper compensation to the Federal government; (3) protection of the environment, public health and safety; and (4) identification and resolution of salable mineral trespass. Operations in sensitive areas or operations with a high potential for greater than usual impacts will be inspected more frequently.

For saleable mineral operations, inspections will be conducted to determine compliance with applicable laws, regulations, and the requirements of approved mining plans. Where mineral production is occurring, the goals of the salable mineral inspection and enforcement/production verification program are (1) an accurate accounting of materials removed; (2) proper compensation to the Federal government; (3) protection of the environment, public health and safety; and (4) identification and resolution of salable mineral trespass. Operations in sensitive environmental areas or operations with a high potential for greater than usual impacts will be inspected more often.

## **OUTDOOR RECREATION**

Monitoring will occur on an ongoing annual basis and will include periodic patrols to check boundaries of recreation areas and signing; ensure visitor compliance with rules and regulations; establish baseline data, as needed; determine current impacts from recreational use; and record data to help determine appropriate levels and patterns of recreational use and the influences of other resource uses. Monitoring will focus on visitation levels; compliance with rules, regulations, and permit stipulations for developed sites; dispersed uses; permits; and prescribed standards and guidelines as set forth in planning documents and the recreation opportunity spectrum classes. Methods of monitoring could include one or more of the following: traffic counters; surveillance at developed sites; limits of acceptable change studies, as needed; user contacts; monitoring of permitted events; and photo documentation of changes in resource condition

over time. These data will be used to manage visitor use, develop plans and projects to reduce visitor impacts, and meet visitor expectations and demands. The level of monitoring will be contingent on available funding.

## **RANGELAND**

Monitoring studies have been established on all allotments in BLM's Planning Area. Data such as actual livestock use, utilization of forage species, climatic data, rangeland condition, and trend will continue to be collected from these studies. The intensity and frequency of monitoring data collection will vary by management category. Allotments in the "I" category are monitored at a greater intensity than the allotments in categories "M" and "C." The monitoring schedule will be dependent on staffing and budget.

The frequency of evaluations will likewise vary due to staffing and budget. At a minimum, evaluations should be coordinated with the renewal schedule of the 10-year permit. Where allotment management plans are in place, the evaluation will coincide with the end grazing cycle. Since 1999, 129 allotments have been evaluated as a result of the permit renewal process.

## **RIPARIAN HABITAT**

The goal of the Socorro Field Office riparian monitoring is to document the progress toward achieving and then maintaining Proper Functioning Condition while being managed under the multiple use and adaptive management concepts. Riparian and wetland areas are considered to be functioning properly when adequate vegetation, landform, or large woody debris are present to dissipate stream energy associated with high water flows, thereby reducing erosion and improving water quality. The process used to assess Proper Functioning Condition is described in BLM Technical References 1737-9 and 1737-15. Proper Functioning Condition is reassessed on a three-year rotating basis. A binder containing monitoring information, such as Proper Functioning Condition results, reassessment schedules, and photo-point monitoring photos, for each designated riparian reach is being compiled and maintained in the Socorro Field Office.

Although the BLM standard is to use proper functioning condition assessments, trend assessments can quickly provide initial information about progress toward desired conditions. Trend assessments include the following: wildlife and aquatic monitoring, water quality monitoring, Rosgen channel typing, riparian site classification, assessment of change over time towards meeting desired range of conditions, low-level aerial photography, and remote-sensing technologies. Riparian areas also are required to meet the riparian standard of the New Mexico Standards and Guidelines (see Appendix E).

Attainment of Proper Functioning Condition (BLM 1993, 1998) objectives is considered a minimum step in the process of achieving desired range of conditions. Proper Functioning Condition and other riparian objectives in most cases do not equate to the desired range of conditions. Determination of Proper Functioning Condition and riparian management objectives is an interdisciplinary process. To determine improvement in conditions relating to lotic proper functioning condition, monitoring methods are described for all assessment categories in BLM Technical Reference 1737-15 (1998).

**Photo Points and Aerial Photos** – Photo points are established during Proper Functioning Condition assessments. Photo sets taken at specific repeatable locations subjectively show changes in stream channels and vegetation over time. Photo points can be very useful to illustrate changes at specific points over time. Aerial photos show changes in channel and vegetation over the length of a stream. They include enough detail to monitor woody species changes over time.

## **SOILS**

Manage uses to minimize and mitigate disturbances to soils and loss of soil sediments from erosion. Maintain soil stability to protect soil ecological health and long-term productivity.

Soil health will be monitored through the use of the Rangeland Standards assessments that assess vegetative and soil conditions. The schedule of monitoring varies for allotment evaluations. These evaluations monitor utilization, vegetative trends, and ground cover. Specific localized soil erosion areas will be evaluated for rehabilitation efforts.

## **SPECIAL DESIGNATIONS MANAGEMENT**

All the special designations including areas of critical environmental concern, special recreation management areas, and special management areas will be assessed on a periodic schedule in order to evaluate maintenance and enhancement of relevant and important values, in the case of areas of critical environmental concern, and the other values for which other areas were designated for special management. All areas also will be evaluated to determine the effectiveness of management in maintaining those values. Monitoring may include collection of both qualitative and quantitative data. Monitoring methods will be the same or similar to those described above for the various resource management programs.

## **SPECIAL MANAGEMENT AREAS**

### ***Wilderness Study Areas***

Wilderness Study Areas (WSAs) will be managed under the Interim Policy and Guidelines for Lands Under Wilderness Review (BLM 1995). The interim management policy requires monitoring of all WSAs on a regular basis to ensure wilderness characteristics are maintained. Monitoring levels could vary by WSA depending on use, access, conflicts, and other considerations. Monitoring boundaries and OHV area and route designations is a priority action during patrols of WSAs. Methods of monitoring could be both motorized along WSA boundaries and open routes, and non-motorized. Aerial surveillance, visitor contact, and permit compliance also will be used as part of monitoring. Projects or uses allowed under the interim management policy also will be closely monitored to ensure compliance and protection of wilderness characteristics. WSAs also will be monitored to ensure any unauthorized activities are documented and rehabilitated as needed.

## **TRANSPORTATION/ACCESS – OFF-HIGHWAY VEHICLES**

Overall monitoring and evaluation of the Socorro Field Office's Transportation System will be reviewed and updated as needed.

Monitoring OHV uses within the Planning Area will be ongoing with a focus on compliance with specific designations, as well as determining whether these uses are in compliance and/or causing adverse effects on various resources. Methods of monitoring will include visitor contacts, permit review, visual surveillance, traffic counters, periodic patrols to check area boundaries and routes, signing, and visitor use. Aerial reconnaissance and use of satellite imagery could be used as well. Closures will be monitored to ensure public safety and protect affected roadbeds or areas. Baseline data will be established for sites where OHV use is occurring, and sites will be rehabilitated or closed as necessary, contingent on available funding.

## VEGETATION

Monitoring to determine success in meeting vegetation management objectives will include periodic measurements of plant composition, vigor, and productivity, as well as measurement of the amount and distribution of plant cover and litter which protects the soil surface from raindrop impact, detains overland flow, protects the surface from wind erosion, and retards soils moisture loss through evaporation. Additional data to determine the effectiveness of established tools in meeting objectives may include herbaceous or woody utilization, actual use, and climatic conditions.

Determination of trends in production, structure, composition of vegetation and determination of soil/site stability, watershed function, and integrity of biotic community will be done through the rangeland health assessment process prescribed in the most current versions of Interpreting Indicators of Rangeland Health (Shaver et al. 2000), and Bureau of Land Management (BLM) Manual 4180 and Handbook H-4180-1 guiding implementation of the rangeland health standards (BLM 2001).

### ***Special Status Plants***

Monitoring will include surveys to determine the distribution, resource conditions, and trends of special status plant species and representative habitats. This will include determining plant composition at the site, checking for invasion of exotic species, monitoring localized disturbances (from off-highway vehicle [OHV] use, recreational use, etc.), and determining trends in special status plant attributes. Monitoring methods will include establishing photo points and doing periodic ocular surveillance. Any new ground-disturbing activities or National Environmental Policy Act actions will require a survey clearance for presence or absence of special status plants. Trends in special status plants and vegetation will be determined and could include such things as demographic studies, density, cover, and frequency (in exclosures versus open areas). Methods to accomplish this could include establishing new exclosures to determine effects of use versus nonuse, developing conservation agreements/conservation strategies, and conducting vegetative attribute sampling in accordance with Measuring and Monitoring Plant Populations (Elzinga et al. 1998).

### ***Invasive/Noxious Weeds***

Evaluation of treatments will continue in cooperation with the State of New Mexico, Socorro and Catron Counties, and private interests as well as neighboring counties and Federal jurisdictions. Inventories to identify new introductions, distribution, and density of noxious weed populations will be carried out on an annual basis in cooperation with the aforementioned entities. Known noxious weed sites, which are identified for treatment, will be visited each year and evaluated for effectiveness of control. Known sites not identified for treatment will be visited on a rotational basis over three years. All known sites visited will be located with a global positioning system (GPS) unit, photographed, measured, and a determination of the need for future treatment will be made.

Inventories for new noxious weeds will be conducted each year on a three-year rotation through the resource area. All burned areas (natural and prescribed) will be surveyed for noxious weeds for three years following the burn. Any newly discovered sites will be located with a GPS unit, photographed, measured, and a determination of the need for future treatment will be made. Ecological trends due to changes in vegetation composition over time, in areas dominated by competing undesirable plant species, will be measured through periodic rangeland health assessments following procedures outlined in Interpreting Indicators of Rangeland Health (Shaver et al. 2000).

## VISUAL RESOURCES

Monitoring will be ongoing for all projects (including but not limited to projects associated with any developments, land alterations, vegetation manipulation, etc.), which could potentially affect visual

resources. These projects will be monitored to ensure compliance with established visual resource management classes. Monitoring will include use of the visual contrast rating system, described in BLM Manual 8400 (BLM 1984), where appropriate, during project review.

## **WATER RESOURCES**

Manage uses to maintain or improve overall watershed health by maximizing infiltration for groundwater recharge. Manage uses to maintain or improve surface water quality in watersheds, and watersheds which affect streams that are listed as water quality limited under the Clean Water Act, Section 303 (d). Manage resources to maintain or reduce salinity loading in accomplishing the goals and objectives outlined in the Colorado River Salinity Control Act.

Watershed health will be monitored through the use of the Rangeland Standards assessments that assess vegetative and soil conditions. The schedule of monitoring varies for allotment evaluations. These evaluations monitor utilization, vegetative trends, and ground cover.

## **WILD HORSES**

A monitoring plan will be developed to measure the achievement or non-achievement of objectives. Routine monitoring within the Herd Management Area will be conducted on habitat and wild horses at a minimum of once every three years or prior to the next gather. Monitoring of habitat may consist of utilization of key forage species, trend of vegetation, precipitation, and water availability.

Various types of census methods may be used to determine the number and distribution of wild horses. Census methods recommended by the National Academy of Science Committee on Wild Free-Roaming Horses and Burros will be used to determine population size.

Data used to assess herd condition and health will be collected during the census, when conducting gathers, or from routine observations. This can include age and sex structure of the herd, lactation and pregnancy, distribution, band size, color, height, physical condition, and behavior. At times, blood samples may be drawn from horses to test genetic diversity.

## **WILDLIFE HABITAT AND SPECIAL STATUS SPECIES**

Monitoring of wildlife enhancement projects will be implemented annually or semiannually as time, funding, and availability of personnel allows. Data will be used to help determine areas where habitat is limited and where special management may be needed. Where vegetation treatments are applied, annually or semiannually monitor results with photo points and vegetation sampling that includes species and structural composition of the sites both pre-and post-treatment, if possible. Baseline big game and non-game use patterns and estimated population levels will be calculated using information collected annually from the New Mexico Department of Game and Fish. These will be compared with post-treatment use patterns and population numbers, along with vegetation sampling, and will be used to determine the relative effectiveness of the treatment. This monitoring will be accomplished by contract or with the aid of Federal, State, and private employees. Every five years or as time, funding, and availability of personnel allows, the number of acres of Desert Bighorn Sheep, mule deer, elk, and Pronghorn Antelope habitat that has undergone vegetation treatments will be evaluated to determine what percentage of the proposed treatment has been completed. In addition, every five years, population levels and distribution of these species within the resource area will be evaluated using annual observations and herd counts conducted by the New Mexico Department of Game and Fish.

Monitoring could consist of intensive research projects or passive population inventories designed to help identify the extent of the populations and the habitats that are being used. Inventories of special status

species will be completed once every one-to-three years for species known to occur within the Planning Area.

Annually or semi-annually assess landscape changes in a variety of vegetative communities from wildfire, prescribed fire, vegetation treatments, insect infestation, or other major influences. These changes will be mapped using GPS, geographic information system, and remote sensing technologies. The number of acres will be reported for each type of action. Assessments will be based on changes in the size and composition of each major vegetative community. Changes will reflect suitability for dependent/obligate species for each vegetative community. Each vegetative community will be evaluated periodically during Rangeland Health Assessments and after major catastrophic events such as large-scale wildfires. Where necessary, recommendations will be made for protection and restoration of damaged or degraded habitats.

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## APPENDIX E: ROS DEFINITIONS AND VRM CLASS OBJECTIVES

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### RECREATIONAL OPPORTUNITY SPECTRUM

The recreation opportunity spectrum (ROS) provides the conceptual framework for inventory, planning, and management of recreation resources. The ROS recognizes that people differ in their needs and the experience they desire. Also, the resource base is not uniform; it varies in its potential for providing recreation experiences. The ROS provides a way to characterize either the capability of a resource to provide an experience or the demand for an experience in terms of the activity opportunity and setting opportunity provided or demanded. Therefore, recreation opportunities can be expressed in terms of three components: (1) the activities, (2) the setting, and (3) the experience. The possible combinations of these three components are arranged along a continuum or spectrum. The ROS is divided into six classes, with each class defined in terms of its combination of activity, setting, and experience opportunities. The six classes are primitive, semi-primitive non-motorized, semi-primitive motorized, roaded natural, rural, and urban. As conceived, the spectrum has application to all land, regardless of ownership or jurisdiction. Classes are described as follows.

#### ***Primitive***

This is essentially an unmodified natural environment of fairly large size. Use of motorized vehicles is prohibited. There is an extremely high probability of experiencing isolation, closeness to nature, and self-reliance on outdoor skills. Activities may include hiking, nature study, fishing, cross-country skiing, and floatboating.

#### ***Semi-primitive Non-motorized***

This is a predominantly natural or natural-appearing environment of moderate to large size. Minimum on-site controls and restrictions may be present. Use of motorized vehicles is prohibited. There is a high probability of experiencing isolation, closeness to nature, and self-reliance in outdoor skills. Activities may include camping, hunting, snowshoeing, and floatboating.

#### ***Semi-primitive Motorized***

This is a predominantly natural or natural-appearing environment of moderate to large size. User interaction is low, but there is evidence of other users. Minimum on-site controls and restrictions may be present. Use of motorized vehicles is permitted. There is a moderate probability of experiencing isolation, closeness to nature, and self-reliance in outdoor skills. Activities may include boating, motor biking, specialized landcraft use, mountain climbing, driving for pleasure, camping, and picnicking.

#### ***Roaded Natural***

This is a predominantly natural-appearing environment with moderate evidence of humans. Evidence usually harmonizes with the natural environment. Management provides for the use of conventional motorized vehicles. There is an equal probability to experience affiliation with other user groups and for isolation and interaction with the natural environment. Challenge and risk opportunities are not very important, although testing of outdoor skills may be. Opportunities for both motorized and non-motorized recreation are available. Activities may include bus touring, water skiing, walking, canoeing, sledding, and driving for pleasure.

#### ***Rural***

This is a substantially modified environment. Resource modifications and utilization practices are to enhance specific recreation activities. Facilities are designed for use by a large number of people. Motorized use and parking opportunities are available. The probability of user interaction is moderate to high, as is the convenience of sites and opportunities. These factors are generally more important than the

physical setting. Wildland challenges and testing of outdoor skills are generally unimportant. Activities may include interpretive services, swimming, bicycling, recreation cabin use, and skiing.

### **Urban**

This is a substantially urbanized environment, although the background may have natural-appearing elements. Renewable resource modernization and urbanization practices are to enhance specific recreation opportunities. Vegetative cover is often exotic and manicured. Large numbers of users can be expected on site and in nearby areas. Facilities for highly intensified motor-vehicle use and parking are available. The probability of user interaction is high, as is the convenience of sites and opportunities. Experiencing natural environments and uses of outdoor skills are relatively unimportant. Opportunities for competitive and spectator sports and for passive uses are common. Activities may include resort lodging, ice skating, team sports participation, tour boat use, and picnicking.

## **VISUAL RESOURCE MANGEMENT CLASS OBJECTIVES**

The Federal Land Policy and Management Act requires the Bureau of Land Management to consider the effects of management actions on the visual quality of the landscape. To protect visual resources, all public land is inventoried to determine its Visual Resource Management classification. The Visual Resource Management objectives for each of the four possible classifications are described below.

### **Class I**

The objective of this classification is the *preservation* of the existing landscape's character. Providing for natural ecological changes, this class allows limited management activity. The very low level of change must not attract attention. Class I is assigned to those areas in which management decisions have been made to preserve a natural landscape. Thus, the class includes wilderness study areas and other congressionally and administratively designated areas.

### **Class II**

The *retention* of the existing character of the landscape is the objective of this classification. The level of change to landscape characteristics should be low; management activities may be seen but should not attract the attention of a casual observer. Any alterations must conform to the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.

### **Class III**

The objective of Class III is the *partial retention* of the existing landscape character. Moderate levels of change are acceptable. Management activities may attract attention but should not dominate the casual observer's view. Changes should conform to the basic elements of the predominant natural features of the characteristic landscape.

### **Class IV**

Class IV provides for major landscape *modification* management activities. These management activities may dominate the view and become the focus of viewer attention. Every effort should be made to minimize the impact of these projects by carefully locating activities, minimizing disturbance, and designing the projects to conform to the characteristic landscape.



## **APPENDIX F: LAND/MINERALS DISPOSAL POLICY AND ROW EXCLUSION/AVOIDANCE AREA PLAN**

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### **SURFACE ESTATE DISPOSAL POLICY**

All surface estate disposal actions require the preparation of a mineral report to assess the mineral potential of the property prior to disposal.

Any potential interference with mineral development will be considered through the disposal process. The creation of a split surface-mineral estate causing surface interference with Federal mineral development will be avoided to the extent possible. Any surface disposal action will closely analyze potential impacts to Federal mineral material development. All surface estate patents within areas of known coal potential will carry a reservation of surface owner consent rights under the Surface Mining Control and Reclamation Act of 1977.

The following items will be examined when considering the merits of any disposal:

- Consistency and conformance with current planning
- Consistency with mineral resource policy and fluid mineral leasing procedures
- Potential effects on special status species and their habitat
- Potential effects on recreation and wilderness values
- Potential effects on prime and unique farmland
- Floodplain and flood hazard evaluation
- Potential effects on cultural and paleontological resource values
- Potential effects on American Indian religious values
- Potential effects on visual resources
- Potential effects on ACECs
- Potential effects on wetlands
- Potential effects on existing rights and uses
- Public controversy
- Potential effects on health and safety
- Potential effects on adjacent uses and ownership
- Potential effects on air resources

The following procedures will be followed for the various types of surface estate land disposal actions in the Socorro Field Office Area:

#### ***Exchanges***

Disposal by exchange must meet the criteria outlined in the Federal Land Policy and Management Act (FLPMA) Sec. 206, whereby it is determined that the public interest will be well served by making the proposed exchange. Exchanges within designated retention areas may be possible if it is clearly determined that it is in the best interest of the public. The following principles will guide the Socorro Field Office in its land exchange program:

1. The Socorro Field Office will continue to strive to process mutually benefiting, public interest land exchanges in a timely and efficient manner.
2. Acquisition through exchange rather than purchase of lands or interests in lands required for resource management programs will always be the preferred method of acquisition, as this will reduce the expansion of Federal real estate holdings and help to assure the integrity of State and local tax basis.
3. Comments from State and local governments and the general public shall be sought and considered before completion of each exchange.
4. Patent and deed reservations and conditions will be kept to the absolute minimum necessary to complete the transaction. Rights of third-party right-of-way holders and other legal interests in the exchanged lands will be protected.
5. The generally preferred rule is for both surface and subsurface (mineral) estates to be traded in an exchange. However, due to third-party encumbrances, or difficulties in the valuation process, it may be preferable to complete certain exchanges with reservations. Such exceptions to the generally preferred rule are to be made on a case-by-case basis.
6. Exchanges shall be utilized to consolidate the surface and subsurface estates for both the Federal government and non-Federal owners in split estate situations.
7. Exchanges may be utilized to affect ownership and management area boundary changes or adjustments and to form more logical and efficient land and resource management areas for both the Federal government and non-Federal owners.
8. As the law permits, expenses incurred by the BLM on exchange actions for the benefit of other Federal agencies shall be recovered from the benefiting agency. The BLM shall not attempt to recover nominal costs.
9. When an exchange involves the cancellation in hold or in part of a grazing permit or lease, the compensation for rangeland improvements and 2-year notification requirements of Section 402(g) of the FLPMA and 43 Code of Federal Regulations (CFR 4110) will be met.
10. The acquisition of nonpublic lands containing unique or unusual historic, cultural, mineral, recreational, scientific, and scenic or wildlife habitat values will be pursued when formulating any exchange proposal.

## ***Sales***

Property selected for sale must be identified as being potentially suitable for disposal in an approved land use plan and must meet one or more of the criteria outlined in the FLPMA Sec. 203. In addition, if the tract is 2,500 acres or more, procedures outlined in Sec. 203(c) must also be followed. The disposal criteria are as follows:

- Such tract because of its location or other characteristics is difficult and uneconomic to manage as part of the public lands, and is not suitable for management by another Federal department or agency; or
- Such tract was acquired for a specific purpose, and the tract is no longer needed for that or any other Federal purpose; or
- Disposal of such tract will serve important public objectives, including but not limited to expansion of communities and economic development, which cannot be achieved prudently or feasibly on land other than public land and which outweighs other public objectives and values, including but not limited to recreation and scenic values, which would be served by maintaining such tract in Federal ownership.

Anticipated environmental impacts to existing resources such as minerals, wildlife, recreation, range, cultural resources, wilderness values, floodplains, paleontological values, visual resources, areas of critical environmental concern, wetlands, threatened or endangered rivers, prime or unique farm lands, and social and economic conditions, will be considered during the preparation of each environmental assessment. The environmental assessment will be used to determine whether the subject parcel is suitable to be offered for sale. Once this determination has been made, a fair market appraisal of the property will be completed to set the minimum acceptable bid.

If a tract is determined suitable for sale, the environmental assessment will analyze the method of sale that will be used to dispose of the tract. Several factors are considered in determining the method of sale which include but are not limited to the needs of State and/or local governments, adjoining landowners' interests and concerns, public policies, historical uses, and equitable distribution of the land. In accordance with 43 CFR 2711.3, the Socorro Field Office policy for determining the sale method is as follows:

1. Competitive bidding is the preferred method of sale and will be used where clearly there will be a number of interested parties bidding for the land and they could make practicable use of the land regardless of adjoining landownership. Competitive bidding will also be used where the land is clearly within a developing or urbanizing area and land values are increasing due to their location and interest on the competitive market. If there are no overriding bases for modifying competition or direct sale, the land will be offered through competitive bidding. The normal practice for competitive sales is to first offer the land for sale by sealed bids; if unsold, the tract is offered for sale over-the-counter.
2. Modified competitive bidding may be used to permit the existing grazing user or adjoining landowner to meet the high bid or to limit the number of persons permitted to bid on the land. These sales will normally be for lands not located near urban expansion areas or in areas with rapidly increasing land values, when there is a need to avoid jeopardizing existing use of adjacent land, to assure compatibility of the possible uses with adjacent lands, and avoid dislocation of existing users. This procedure will allow for limited competitive bidding to protect ongoing use.
3. Direct (without competition) sales may be used when, in the opinion of the Authorized Officer, the public interest would best be served. Examples include but are not limited to:
  - A tract identified for transfer to State or local governments or nonprofit organizations; or
  - A tract identified for sale that is an integral part of a project or of public importance and speculative bidding would jeopardize the timely completion and economic viability of the project; or
  - There is a need to recognize authorized use such as an existing business which would be threatened if the tract were purchased by other than the authorized user, or
  - A tract is surrounded by land in non-Federal ownership and does not have public access; or
  - The lands support inadvertent unauthorized use or occupancy.
4. When lands have been offered for sale under direct or modified bidding procedures and they remain unsold, then the land will be re-offered by the competitive bidding procedure. In no case will the land be sold for less than fair market value.

Public participation and intergovernmental coordination will be sought and encouraged during the development of each sale. Where a decision is made to dispose of land within a grazing allotment, permittees and lessees shall be given 2 years prior notification before their grazing preference may be cancelled in whole or part. A permittee or lessee may unconditionally waive the two-year prior notification.

The lands may be disposed at any time, provided a condition of the exchange or sale allows the existing grazing user to continue grazing livestock on the land for at least two years from the date the two-year notice is received. 43 CFR 2711.1-3 addresses sales requiring grazing permit or lease cancellations.

In such cases, the condition of the disposal will include the same terms and conditions as the permit/lease in regard to numbers, kind of livestock, season-of-use, animal unit months, and maintenance of range improvements. Fees must be the same as the Federal grazing fees.

Grazing permittees/lessees will receive fair market value (less salvage value) for their interest in authorized permanent rangeland improvements located on public lands in accordance with 43 CFR 4120.3-6. Compensation for grazing improvements under the land sale action is addressed in 43 CFR 2711.4-1. If floodplain tracts are designated for disposal, the patent will contain language indemnifying the United States against any claims for loss or injury due to flooding.

Lands designated as retention areas may be offered for disposal through a competitive sale unless the authorized officer determines the interest of the public would best be served by modified competitive bidding or direct sale (WO IM-2002-143). Land ownership pattern within these areas are moderately consolidated and contain small tracts of land. Land sale may be pursued if the disposal of lands within designated retention areas, not including ACECs, special management areas (SMAs), and special recreational management areas (SRMAs) would help enhance manageability and consolidate land status. Several parcels have no legal public access which makes manageability difficult. The parcels offered for disposal shall contain no known significant resources values.

Wilderness study areas (WSAs) and retention areas within ACECs, SMAs, and SRMAs shall be excluded and unavailable for disposal through sales and/or exchanges. Consolidation of ownership within these specially managed areas would be through acquisition of state and private lands to continue improving the ownership and manageability. Any exchange involving lands within retention areas must be exchanged for lands with a higher resource value than lands being disposed.

Direct sales must be clearly determined by the authorized officer to ensure that the sale is in the best interest of the public. When lands have been offered for direct or modified bidding and they remain unsold, the land will be re-offered under competitive bidding procedures. Mineral (subsurface) estate will be retained for all sales that occur within designated retention areas. Permittees will be given 2 years prior notification to disposal of lands within a grazing allotment (permits/leases) before their grazing may be cancelled in whole or part.

### ***Recreation and Public Purposes Patents***

The Socorro Field Office will continue to issue patents to qualified governmental and nonprofit entities for public parks and recreations sites under the Recreation and Public Purposes (R&PP) Act. These patents may be issued at less than fair market value as outlined in 43 CFR 2740. Applications for patent of public lands under the R&PP Act will be processed as a Socorro Field Office priority under the requirements of the National Environmental Policy Act and will be subject to public review. Current policy dictates that new sanitary landfill sites will be patented and no new lease will be issued in the Socorro Resource Area pursuant to the R&PP Act. R&PP applications may be entertained in either retention or disposal zones; yet, a determination must always be made that the disposal action is in the public's interest.

### ***Mineral Estate Disposal Policy***

Disposal of the mineral estate is possible under Sections 206 and 209 of the FLPMA. It is the policy of the BLM to avoid disposing of the surface estate while retaining the mineral estate unless there are areas of "known mineral value," as defined in 43 CFR 2720.0.5. In areas of "known mineral value," the mineral

estate (and the surface estate if substantial interference to development will result) should be retained except as described below.

Prior to any land disposal a “mineral value” determination must be made following a field reconnaissance by a BLM mineral examiner. A mineral report must be written to evaluate the leasable, locatable, and saleable mineral potential of each proposed sale or exchange. Under the FLPMA, the conclusion of the mineral examiner will include an opinion as to whether the lands have “known mineral values.” If professional judgment concludes that the land does not contain “known mineral values,” the surface and subsurface estate may be conveyed, subject to any existing mining claim(s) or mineral leases.

A mining claim of record under Section 314 of the FLPMA generally prevents an exchange or sale. If the land is under mining claim, the surface should be retained under Federal ownership or the claim examined for validity. However, a validity examination may be waived and the BLM may proceed with the sale or exchange of both the surface and the mineral estate, subject to the existing mining claim(s) if:

- The land meets the criteria for disposal as determined through land-use planning; and
- The land has no “known mineral value” as determined by a BLM geologist or mining engineer; and
- The prospective patentee is willing to accept defensible title, preserving whatever rights the mining claimant may have. Conveyance of the surface and mineral estate will be subject to “existing mining claim(s),” allowing the mining claimant to apply for and receive full fee patent if a valid discovery were made prior to the date of transfer under Sections 206 or 209, or alternatively, receive patent to the mineral estate only if discovery were made after the original conveyance.

The BLM will proceed with a sale or exchange only after reasonable efforts have been made to secure relinquishment of the mining claims(s). If the mining claimant opposes the action, the Notice of Realty Action protest procedures will apply.

For a direct sale or an exchange, the proponent must be informed early and fully of the potential title conflicts and rights of the mining claimant under the law. The BLM should then proceed only if these conditions are acceptable to the proponent. For a proposed competitive sale, the field office must carefully consider the effect on sale price, likelihood of success, and interests to be served if the sale is made subject to the rights of the mining claimant. If it is clearly in the public interest to proceed, the BLM must secure purchaser waiver of any liability against the United States in the event of subsequent title litigation.

In cases where lands are patented without a reservation of locatable minerals, a FLPMA patent is believed to have standing to bring private contest (43 CFR 4.450) against the mining claim(s). Should he or she do so, the burden is upon the patentee to prove lack of discovery. If the patentee is successful, or if the claims are abandoned or relinquished, the land will not be open to further location, and the patentee will receive full title to the involved locatable minerals.

Mining claim locations and mineral leases for lands in which the surface title has passed under the FLPMA disposal authority may be made only after regulations providing for such locations or leasing have been promulgated. Because these regulations have not as yet been issued, lands disposed of under the FLPMA are subject to de facto withdrawal. Lands disposed of under the FLMPA are not withdrawn from mineral material sales or free-use permits.

All minerals must be reserved if the Federal lands are conveyed out of Federal ownership pursuant to the FLPMA disposal authority, except in the limited instances that follow:

## 1. Sales

- a. If the public lands proposed for sale are determined to have “known mineral values” for locatable, leasable, or saleable minerals, one of the following courses of action may be taken:
  - (1) Reject the offer to purchase or cancel the offer of sale.
  - (2) Dispose of the surface estate and reserve all of the mineral interests to the United States.
  - (3) Dispose of the surface and convey all or part of the mineral interests under terms set forth in Section 209(b) of the FLPMA.
- b. If the lands have no “known mineral value,” the mineral interests may be simultaneously disposed of with the surface estate under authority of Section 209(b) of the FLPMA.

## 2. Exchanges

- a. Public lands which do not have “known mineral values” may be offered to exchange without any mineral reservation. This will apply whether or not the non-Federal party in an exchange controls the minerals under his or her land.
- b. If the public lands have some potential for mineral development, reserving the mineral interests is not mandatory as long as the values can be equalized by the payment of money and so long as the payment does not exceed 25 percent of the total value of the land.

In any case, it is normally desirable to keep surface and mineral ownership together in an exchange, whenever possible, to eliminate future problems associated with split estate ownership.

- c. If the public lands in an exchange are determined to have “known mineral values” for locatable, leasable, or saleable minerals, it may be in the public interest to cancel the offer, depending upon the significance of the deposits. The leasable minerals alone can be reserved if significant.

## RIGHT-OF-WAY AVOIDANCE AND EXCLUSION AREAS PLAN

This RMP identifies a number of right-of-way avoidance and exclusion areas within the Socorro Planning Area. This approach will allow a right-of-way applicant to review resource area maps to determine what areas are closed to development and which open areas are subject to thorough examination with the potential for application rejection. All applicants will be notified that their project, if placed in an avoidance area, may be subject but not limited to requirements for recontouring and/or revegetating disturbed areas, painting certain above-ground structures to blend with the surrounding landscape and vegetation, and using special tower design and/or pole color.

All designated right-of-way exclusion areas will be closed to all forms of new right-of-way development. BLM Manual 1623.51 A. 1c states that right-of-way exclusion areas are areas where future right-of-way may be granted only when mandated by law. Mining claimants cannot be denied reasonable access to an exclusion area unless the land is withdrawn from mineral entry (see 43 CFR§ 3809.0-6). The majority of the right-of-way exclusion areas are within WSAs, ACECs, and areas assigned Visual Resource Management Class I. As a point of clarification, it should be recognized that many of the areas or portions thereof discussed within this plan are presently under wilderness review and designated as WSAs. There are 13 WSAs totaling approximately 291,826 acres within the Socorro Planning Area. These lands are presently being managed under the *Interim Policy and Guidelines for Land Under Wilderness Review*

dated July 5, 1995, and will continue to be managed until they are either added to the National Wilderness Preservation System or removed from wilderness review. Any right-of-way authorizations granted in these areas after they are removed from wilderness review will be managed under the prescriptions within this plan.

All right-of-way applicants should be aware that a mining claimant may refuse to allow a right-of-way to cross a claim if such claim was located prior to July 23, 1955. In such cases, the BLM will reject a right-of-way application request or will help the applicant in the consideration of an alternative route which would be acceptable.

The right-of-way avoidance areas are defined in the BLM Manual 1623.52 as areas where future rights-of-way may be granted only when no feasible alternative route is available. The purpose of the right-of-way avoidance areas is to reduce the likelihood of rights-of-way being placed in these areas. When possible, alternative routes and sites will be considered. The Authorized Officer will closely review goals and objectives for specially-designated areas identified as avoidance areas in the resource management plan. This process will guide the Authorized Officer to determine which right-of-way applications will be rejected upon submittal or processed for issue. All issued right-of-way grants will be subject to special resource mitigating measures or stipulations. The terms and conditions of all right-of-way grants depend upon the sensitivity of the affected resource, applicable laws and regulations, and management objectives of special designated areas identified in the Socorro Resource Management Plan. All right-of-way proposals will require the preparation of a site-specific environmental analysis to determine impacts and mitigating measures needed to specifically protect sensitive resource values.

The right-of-way avoidance areas also apply to land use leases and permits in accordance with Section 302 of the FLMPA. The specially-designated areas identified in the Resource Management Plan, including areas of critical environmental concern, special recreation management areas, and special management areas, include management prescriptions which exclude or avoid leases as well as rights-of-way. Leases and permits related to realty or land actions will be discouraged within avoidance areas. In cases when the location of the proposed activity cannot be avoided, the Authorized Officer will analyze it on a case-by-case basis. All leases and permits will be subject to the same review as stated in the paragraph above. All issued leases and permits will be subject to special resource mitigating measures and/or stipulations. These mitigation measures and/or stipulations prescribed will depend on the sensitivity of the affected resources, applicable laws and regulations, and the objective identified in the Resource Management Plan.

All expansions of existing right-of-ways, permits, and leases located within the avoidance areas will be avoided. When avoidance is impossible, the proposed expansion will be subject to mitigation measures. The Authorized Officer will closely review the goals and objectives of the management area in which the proposed expansion will occur. This will help determine whether to reject or authorize the proposed expansion. All expansions which significantly conflict with the goals and objectives for special designated areas identified in the Resource Management Plan will be rejected upon submittal.

When the number of facilities within an avoidance area reaches the point of saturation, the Authorized Officer may determine that no additional authorization will be granted. This determination will be made on the basis of whether the management objectives for the Visual Resource Management class for the area can no longer support additional facilities without jeopardizing the visual quality of the area. This plan may be modified by the Authorized Officer at any time and is intended strictly as a guideline for the authorization of new proposed right-of-way project within the Socorro Resource Area.

Right-of-way application requests for the following uses in avoidance areas will be rejected upon submittal:

- Power lines larger than 14 kilovolt
- Aboveground oil, gas, and water pipelines
- Radio telescopes
- Airport runways
- New roads with more than a 14-foot-wide driving surface
- Advertisement signs
- Artillery testing
- Dams/reservoirs
- Railroads
- Tramways and conveyors
- Communications sites
- Solar energy development projects greater than 5 acres
- Wind power energy facilities

The following right-of-way applications may be issued on a case-by-case basis within avoidance areas:

- Solar energy facilities such as photovoltaic systems
- Irrigation ditches and canals
- Buried oil, gas, and water pipelines
- Power lines smaller than 14 kilovolt
- Telephone lines (buried preferred)
- Water storage tanks
- Air quality monitoring stations
- Staging areas
- Fiber optics (buried preferred)
- Water wells
- New roads with equal to or less than a 14-foot-wide driving surface
- Monitoring and testing facilities
- Filming permits
- Biomass facilities
- Wind energy facilities

The above lists are not all-inclusive and further analysis may result in denial of the right-of-way application or mitigation of the proposed right-of-way to meet management objectives for avoidance areas.



The above criteria apply to all avoidance areas included within any special designation boundaries. The avoidance areas within special designations will have different criteria to allow for issuance of rights-of-way, permits, and leases. The special designated area goals and resource avoidance criteria are identified in the management prescriptions for wilderness study areas, areas of critical environmental concern, special recreation management areas, and Special Management Areas.

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## APPENDIX G: BLM STEWARDSHIP CONTRACTING GUIDANCE

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The following information provides guidance on the preparation, implementation, and tracking of BLM stewardship projects, in accordance with Section 323 of Public Law 108-7, the Consolidated Appropriations Resolution, 2003.

Authorization: Section 323 of Public Law 108-7 (Title 16, United States Code, Section 2104 as revised February 28, 2003 to reflect Sec. 323 of H.J. Res. 2 as enrolled [16 U.S.C. 2104]), the Consolidated Appropriations Resolution, 2003, amended Pub. L. 105-277, sec. 347, to grant the Forest Service (FS) and the BLM authority until September 30, 2013, to enter into stewardship projects with private persons or public or private entities, by contract or by agreement, to perform services to achieve land management goals for the National Forests or public lands that meet local and rural community needs.

### A. GENERAL

1. Definition – Stewardship projects are those activities used to accomplish one or more of the goals (section B (1)) listed in P.L. 108-7, Section 323 (b) where the BLM would enter into contract or agreement for services to achieve land management goals and meet local and rural community needs. In addition, a source for performance under a contract must be selected on a best value basis. The legislation authorizes the value of vegetative material to be applied as an offset against the cost of services received; and multi-year contract authority greater than five years but not to exceed 10 years.
2. Stewardship Contracting is not a replacement for the BLM's established timber sale program. Forest management projects designed primarily to enhance volume are not suitable for stewardship contracting.
3. Ensure all stewardship projects comply with applicable environmental laws and regulations, including the appropriate level of environmental review under the National Environmental Policy Act (NEPA), and are consistent with the applicable land use plans.
4. Field units may use stewardship contracting as a tool to achieve resource work identified through the normal planning processes and as described in the 10-year Implementation Plan for the National Fire Plan.
5. Any vegetative material removal must be a by-product of meeting the stewardship contracting project goals as stated in section B (1). Removal of these products must be consistent with the objectives developed through the collaborative process and the applicable land use plan objectives.

### B. PROJECT DESIGN

1. The primary objective of a stewardship contracting project is to achieve one or more of the land management goals that meet local and rural community needs. These goals as identified in the authorizing legislation may include but are not limited to:
  - a. road and trail maintenance or obliteration for improved water quality;
  - b. soil productivity, habitat for wildlife and fisheries, or other resource values;
  - c. setting prescribed fires to improve composition, structure, condition, and health of stands or to improve wildlife habitat;
  - d. removing vegetation or other activities to promote healthy forest stands, reduce fire hazards or achieve other land management objectives;
  - e. watershed restoration and maintenance;

- f. restoration and maintenance of wildlife and fish habitat; and control of noxious and exotic weeds and reestablishing native plant species.
- 2. When designing stewardship contracting projects, consider projects involving treatments and techniques available to make forests, woodlands, and rangelands more resilient to natural disturbances such as fire, insects, disease, wind, and flood.
- 3. For contracts exceeding five years in duration, Field Managers will include a concise rationale for contracts in project documentation. This rationale should consider such factors as the scope of the project, the type of the material to be treated, the availability of local capacity to process and use the material removed from the land, and the potential development of new markets for small diameter material, as well as operational factors such as local weather patterns, sensitive wildlife species habitat use cycles, and seasonal restrictions for wildfire prevention.
- 4. An open, collaborative process shall be used to identify local and rural community needs. Seek early involvement of tribal governments and local government agencies, and any interested groups or individuals in various phases of project development and implementation. Utilize existing processes (publication of legal notices, newsletters, web based information, etc.) to publicize the opportunity for public involvement and the availability of environmental documents.

## C. ROLES AND RESPONSIBILITIES

### 1. Washington Office

- a. The responsibility of the Washington Office (WO), AD-200 Directorate, is to work with the WO AD-800 Directorate, the National Office of Fire and Aviation, and the BLM National Business Center to develop and implement automated methodology to track the value of goods exchanged and services provided in conjunction with stewardship contracting projects.
- b. AD 200 will produce the annual report to Congress required by the authorizing legislation.
- c. The BLM national headquarters office (AD 200) will review and the U.S. Department of the Interior Assistant Secretary for Land and Minerals Management will approve proposed stewardship contracts.
- d. The national office will assign unique project numbers from a block reserved by the National Business Center (NBC). See F (2).

### 2. State Director

- a. State Director approval for proposed stewardship contracting projects will be required prior to submission to the Washington Office.
- b. BLM State Directors must ensure that field offices complete the reporting and tracking requirements identified in this directive.
- c. State Directors will set priorities for stewardship contracting projects within their state.
- d. The proper use and management of stewardship contracting authority must be assessed as a normal part of BLM statewide or national resource program and activity reviews for those programs utilizing the authority. Particular programs of interest include Forest and Woodland Management, and Fire/Fuels Management.

3. State Coordinators – Each State Office has assigned a stewardship contracting project coordinator for their respective state. Responsibilities of the stewardship contracting project coordinator include:
  - a. clarifying stewardship contracting project guidance
  - b. obtaining State Director review and approval
  - c. monitoring project status
  - d. ensuring that project reporting is accurate and timely
  - e. soliciting Field Office feedback and making recommendations to the WO on ways to improve the effectiveness of the stewardship contracting tool.
4. Field Office
  - a. Submit proposed stewardship contracting contracts to the state coordinators using the Budget Planning System (BPS) format (Attachment 1) Stewardship Proposal Format, including fuels funded projects. All submissions must contain project objectives, location/size, type of treatment in detail, partners and collaborative processes used, length of project, status of NEPA, issues and highlights and a list of contacts.
  - b. During all phases of stewardship contracting (i.e. planning, contract development, funding, implementation and monitoring), the process will be integrated with other Field Office programs and activities, utilizing multiple resource specialists, including contracting personnel.
5. Contracting Officers
  - a. Contracting Officers with Level III and IV warrants in the BLM National Business Center and Oregon State Office are delegated stewardship contracting authority according to the attached Delegation of Authority memorandum (Attachment 2), dated September 16, 2003, from the Assistant Secretary, Policy, Management and Budget.
  - b. After successful implementation of stewardship contracting projects, the BLM may consider authorizing contracting officers in additional locations to assist in awarding stewardship contracts and agreements. At that time, the Head of Contracting Activity (HCA) should submit nomination(s) to the Office of Acquisition and Property Management for review and approval.
6. Contracting Officer's Representative – The "Contracting Officer's Representative (COR)" is the on-the-ground administrator for the Contracting Officer.

The COR's authorities and responsibilities are defined in the COR's Designation Letter. The COR is authorized to clarify technical requirements, and to review and approve work clearly within the scope of work. The COR is NOT authorized to issue changes pursuant to the changes clause or to in any other way modify the scope of work.
7. Project Inspector – "Project Inspector" (PI) means the person designated by the COR to perform, as needed, on-the-job government inspection of work accomplished by the Contractor.

The PI is responsible for checking the Contractor's compliance with the technical specifications, drawings, work schedule, and labor provisions at the site of the work.

D. VALUE OFFSET

1. The value of vegetative material may be used to offset the amount of appropriated funds necessary to accomplish service work as part of a stewardship contracting project.
2. Products that may be removed under stewardship contracting authority include vegetative material, such as, but not limited to sawlogs, firewood, post and poles, biomass, seed, shrubs, forage, fungi, and Christmas trees. See Special Forest Product Handbook, H-5400-2 or state specific Miscellaneous Forest Products Price Schedule, H-9352.
3. Vegetative material removed will be appraised at fair market value. Where practicable, and warranted by the market for such material, the value of the material will either be determined through a competitive bidding process or will be a specific required element of the best value criteria. In all cases, the value of the by-product for exchange must equal or exceed the appraised fair market value. Guidance on appraising the value of this material is provided in Attachment 3, Forest Products Appraisal Guidance for Stewardship Contracting.
4. The value of the vegetative material and the cost of the services to be performed must be clearly documented in the contract and on the Product Removal Report (see section J (1)). Before work can begin, the contractor must provide the government a proposed schedule of work (for a minimum of one work season), consistent with the contract for product removal, service work and net payments. As the contract is performed, the Field Office will record the actual volume and value (based on the contract bid price) removed, services performed, and net payments made as outlined in "Product Tracking Requirements," Section J.

E. EXCESS RECEIPTS

1. When the value of the vegetative material exceeds the cost of the service work being performed in a stewardship project, the BLM is authorized to retain the excess receipts and to apply them to other stewardship projects without further appropriation.
2. Excess receipt collections from stewardship contracting projects shall be deposited according to BLM collection procedures into the Stewardship Project Fund and managed according to the definition and requirements contained in the BLM Fund Coding Handbook, H-1684-1. See Attachment 4, Subactivity 5921 Description.
3. In general, excess receipts shall be used to fund other stewardship projects within the State where the receipts were generated, as allocated by the State Director.
4. Funds generated as excess offset values (Section E (2)) from other stewardship contracting projects may also be used to fund the collaborative process used for multi-party monitoring and direct on-the-ground implementation costs. Excess offset values shall not be used to fund program planning, environmental assessments, overhead, administrative, or indirect costs. Managers should consult with the public and interested stakeholders early in the collaborative process for input on where excess offset values could be utilized within a stewardship project.

F. PROJECT SUBMISSION, FUNDING AND ACCOMPLISHMENT

1. Funds from a number of appropriated subactivities and permanent operating accounts may fund stewardship contracting project planning, preparation, implementation, administration, and monitoring. Offices should use the benefiting subactivity concept in determining which funding is appropriate to use.
2. All approved stewardship contracting projects will tracked in the appropriate budget submission and accomplishment tracking database, applicable to the funding used. Fuels – NFPORS, all other subactivities – BPS/MIS, see B(4)(a).

3. Each stewardship contracting project will be assigned a project code by the national office from a specific set of codes reserved for stewardship contracting projects for the purpose of tracking project costs and accomplishments in the Management Information System (MIS). Where other projects codes have already been assigned, such as in the Fuels Program, those assigned project codes will be reported to the Headquarters Office and used to track the costs associated with those projects. The workload measure appropriate for the project will maintain the sub-activity specific tracking requirements.

#### G. CONTRACTING/PRODUCT SALES

1. Stewardship contracting authority provides for the sale or exchange of vegetative material and the procurement of service work within one contract or agreement.
2. For stewardship contracting projects to be completed by contract with a combined value in excess of \$100,000 (services plus product value), the contracts must be prepared using the Performance Based Acquisition format (under development – will be available on the National Acquisition webpage<sup>8</sup>).
3. For stewardship projects below the \$100,000 threshold in G (2), either a service contract or an approved product sale instrument may be used. Typical prescriptive contract language (provisions or stipulations) would be used as appropriate for the contract/instrument and objectives of the project.
4. In addition to cost or price, the contracting officer must consider other “best value” factors, such as contractor past performance, technical approach, and local community benefits in determining contract award.
5. The use of nontraditional contractors, such as counties or not-for-profit or nongovernmental organizations, should be considered where interest is expressed and is consistent with existing authorities. Stewardship contracting contracts should not be automatically set aside for small business concerns.
6. For performance based contracts, the government reserves the right to review and revise the performance standards annually over the life of the contract by contract modification.
7. A stewardship contracting contract is not a timber sale contract and, as such, is not subject to the requirements contained in 43 CFR, Part 5400, Sale of Forest Products. However, it does not preclude including these requirements within a stewardship contract to adequately protect the government’s interests (i.e. export restriction and Non-substitution provisions).
8. Service Contract Act wage rates apply to the stewardship contracting contract. Contract solicitations should be arranged to separate bid prices, specifications, and payments for service work, construction work, and product removal work to help distinguish where these wage rates apply.
9. When required by law, bonding must be used to protect the public interest. When not required by law, bonding may be used when deemed necessary.
  - a. Payment protection in the form of payment bonds should be used to protect the value of the by-product to be removed when the product will be removed prior to cash payment or the contractor’s earning of conservation credits under the contract.
  - b. If necessary, performance bonds should be used to cover the value of the service to be provided.

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<sup>8</sup> At the time of writing, this web address is: <http://web.blm.gov/natacq/>

- c. In either case: (i) performance bond value should be set at no less than 20% of the value of the awarded service work; and (ii) payment bonds should be at least equal to 20% of the value of the by-product not covered by cash payment and/or earned conservation credits.
  - d. Contracting officers are encouraged to strive toward the concept of a single bond to cover "performance", which would include the product value (payment) and the service work rolled into one bond. The value of the bond would be the larger of the performance bond or payment bond as described above.
  - e. If construction activities are included, bonding for the construction activities shall be in accordance with the Miller Act.
10. Offices must ensure that the value of the product cut and/or removed does not exceed the value of the performance bond (not including the portion used to cover 20% of the awarded service work or Miller Act requirements) plus the value of any unpaid service work completed (conservation credits) plus any cash deposits made by the contractor. Field Offices should use the Stewardship Project Tracking Report, Attachment 4, to track the volume and value of the products removed to ensure that contract bonding and service work cover the government's interests.
  11. If utilized, conservation credits (the value of unpaid service work completed) earned by a contractor are not transferable to another stewardship contract held by the same contractor. Conservation credits will be tracked via the Stewardship Project Tracking Report (page 2, Service Completion Form), Attachment 5.

## H. AGREEMENTS

1. Assistance agreements are designed to be used when an outside party requests government financial assistance to support a public purpose. Stewardship contracting projects are designed to achieve specific land management goals, consistent with applicable land use plans. As such, use of assistance agreements to implement stewardship contracting project treatments must be carefully screened and limited use of such agreements may result. (See Agreements Handbook H-1511-1)
2. Decisions to use Assistance Agreements rather than contracts must comply with existing BLM guidance implementing the Grants and Cooperative Agreements Act of 1977, as amended.

## I. MONITORING

1. The BLM will use multiparty monitoring, open to all interested parties, to monitor and evaluate a representative sampling of projects and programs at the appropriate levels. Project level monitoring should be conducted where sufficient public interest exists and funding and/or sufficient volunteer workforce permits. Where adequate up-front funding does not exist to support multiparty monitoring, excess offset values may be used to conduct multiparty monitoring, Section E (2).
2. WO-270 will coordinate with the Forest Service, on an appropriate time frame, a process to establish and/or conduct interagency multi-party monitoring for evaluating and reporting on collaboration and the role of local communities and other external stakeholders in the development of stewardship contracting contracts and agreements. One objective of this monitoring effort is to analyze the effectiveness of stewardship contracting relative to other management tools.

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## APPENDIX H: RANGELAND MANAGEMENT

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### RANGELAND UTILIZATION AND CONDITION

Livestock grazing in the Planning Area is monitored to allow for an average of 50 percent utilization of key forage species per years. Utilization is defined as the degree of forage (grass, forbs, and shrubs) removed from rangelands by grazing animals, both domestic and wild. Livestock numbers permitted on individual allotments are related on forage utilization and the overall balance with management of other resources. One tool for examining rangeland health is ecological condition.

Ecological condition is the present state of the vegetation on a range site in relation to the potential natural community for that particular site. It is an expression of the relative degree to which the kinds, proportions, and amounts of plants making up a community resemble that of the potential natural community. The BLM uses Ecological Site Descriptions – specifically, the similarity index - to describe and identify plant communities. The similarity index compares the present plant community to either the historic climax plant community or the desired vegetation state. The similarity index is a measure of the percentage, by weight, of the historic climax plant community or desired vegetation state that is present on a site. Seral stages can be used to identify the ecological conditions of a site as shown in the following table:

Seral Stage	Estimated Percentage of Resemblance to Potential Natural Community
Historic Climax Plant Community	76-100
Late	51-75
Mid	26-50
Early	0-25

### NEW MEXICO STANDARDS AND GUIDELINES

The 1989 Socorro Resource Management Plan was amended by the New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing Management Statewide Resource Management Plan Amendment and Environmental Impact Statement (New Mexico Standards and Guidelines). As a result of the amendment, the New Mexico Standards and Guidelines were incorporated into the 1989 Resource Management Plan, and will be carried forward in this Resource Management Plan Revision/ Environmental Impact Statement.

The standards of land health are expressions of physical and biological condition or degree of function required for healthy, sustainable lands and define the minimum resource conditions that must be achieved. The three standards that apply to the Planning Area are:

1. Upland Sites Standard:

Upland ecological sites are in a productive and sustainable condition within the capability of the site. Upland soils are stabilized and exhibit infiltration and permeability rates that are appropriate for the soil type, climate, and landform. The kind, amount, and/or pattern of vegetation provides protection on a given site to minimize erosion and assist in meeting State and Tribal water quality standards.

Indicators for this standard may include but are not limited to:

- Consistent with the capability of the ecological site, soils are stabilized by appropriate amounts of standing live vegetation, protective litter, and/or rock cover.



- Erosion is indicated by flow patterns characteristic of surface litter soil movement, gullies and rills, and plant pedestalling.
- Satisfactory plant protection is indicated by the amount and distribution of desired species necessary to prevent accelerated erosion.

2. Biotic Communities, Including Native, Threatened-Endangered, and Special Status Species Standard:

Ecological processes such as hydrologic cycle, nutrient cycle, and energy flow support productive and diverse native biotic communities, including special status, threatened, and endangered species appropriate to site and species. Desired plant communities goals maintain and conserve productive and diverse populations of plants and animals, which sustain ecological functions and processes.

Indicators for this standard may include but are not limited to:

- Commensurate with the capability of the ecological site, plant and animal populations are productive, resilient, diverse and sustainable.
- Landscapes are composed of communities in a variety of successional stages and patterns.
- Diversity and composition of communities are indicated by the kinds and amount of species.
- Endangered and special status species are secure and recovering, with the goal of delisting and ensuring that additional species need not be listed within New Mexico.

3. Riparian Sites Standard

Riparian areas are in a productive, properly functioning, and sustainable condition, within the capability of that site. Adequate vegetation of diverse age and composition is present that will withstand high stream flow, capture sediment, provide for groundwater recharge, provide habitat, and assist in meeting State and Tribal water quality standards.

Indicators for this standard may include but are not limited to:

- Stream channel morphology and stability as determined by gradient, width/depth ratio, channel roughness, and sinuosity.
- Streambank stability as determined by degree of shearing and sloughing, vegetative cover on the bank.
- Appropriate riparian vegetation includes a mix of communities of species with a range of age, density and growth form.

When an evaluation determines that one or more standards are not being met, then the causal factor or factors will be determined. As stated in the Record of Decision for the Standards for Public Land Health and Guidelines for Livestock Grazing Management:

“When an evaluation concludes that an area does not meet one or more standard(s), the Bureau of Land Management will determine the causal factor(s) in not meeting the standard(s). When current livestock grazing practices or levels of grazing use are determined to be significant factors, the Bureau of Land Management authorized officer shall take appropriate action as soon as practical, but no later than the next grazing year (43 Code of Federal Regulations Section 4180.2 (c)).”

Guidelines were established for livestock grazing to be implemented when an area was not meeting the standard or standards and the causal factor was determined to livestock grazing practices or levels of

grazing use. Guidelines are tools such as grazing systems, vegetative treatments, or range improvement projects designed to assist in grazing management. Implementation of guidelines will be done in consultation, cooperation and coordination with the grazing permittee/leasee, involved landowners, and interested public.

Guidelines pertain to livestock grazing only and if the causal factor is determined to be another activity; there are not established guidelines to be implemented. When other activities appear to be the reason for not meeting the standard, management actions that address that particular activity will be implemented that is consistent with policy and regulations governing that activity.

The processes for assessing the standards are evaluated at the watershed level and are an ongoing process. The Socorro Field Office has initiated assessments on approximately 218,000 acres and has determined those areas to be meeting the standards. Assessments are completed by utilizing existing data and Indicators of Rangeland Health (TR 1734-6). The assessment characterizes the status of the ecological processes (water cycle, energy flow and nutrient cycle) by interpreting attributes such as the soil/site stability, hydrologic function, and biotic integrity in relation to the ecological site.

## **ALLOTMENT STATISTICS**

In the 1980s, the Bureau of Land Management developed classification criteria to assist field offices in identifying management priorities by allotment. Allotments are placed in one of three categories—Maintain, Improve, or Custodial—based on certain criteria, as follows:

### ***Maintain (M) Category***

- Present range condition is satisfactory
- Allotments have moderate to high resource production potential and are producing near their potential (or trend is moving in that direction)
- No serious resource-use conflicts and/or controversies exist
- Opportunities may exist for positive economic return from public investment
- Present management appears satisfactory
- Other local criteria

### ***Improve (I) Category***

- Present range condition may be satisfactory or unsatisfactory
- Allotments have a moderate or high resource production potential and are producing at low to moderate levels
- Serious resource-use conflicts and/or controversies exist
- Opportunities exist for positive economic return for public investment
- Present management appears unsatisfactory
- Other local criteria

### ***Custodial (C) Category***

- Present range condition is not a factor
- Allotments have a low resource production potential and are producing at low to moderate levels

- Limited resource-use conflicts and/or controversies may exist
- Opportunities for positive economic return on public investments do not exist or are constrained by technological or economic factors
- Opportunities exist to achieve the allotments' potential through changes in management
- Other local criteria

Table H-1 lists the 2005 grazing allotments that are completely or partially within the Planning Area. Grazing allotments are mapped in the Management Situation Analysis, on file in the Socorro Field Office.

**Table H-1: Grazing Allotment Statistics**

Allotment No.	Allotment Name	Authorization Type <sup>9</sup>	Management Code	Permitted AUMs
00054	Shaw Canyon	03	M	6,936
00077	Emery	15	M	96
00079	Stokes Flat	03	M	5,017
00080	Box Car 7	03	M	12
00081	Estrada Ranch	15	I	2,100
00083	Cat Mountain	03	M	240
00084	Paul Lund	03	I	204
00085	Patterson Canyon	03	M	192
00087	Cottonwood Spring	03	M	31
00088	Mariano Mesa Ranch	03	M	96
00089	South La Jencia	15	M	564
00090	Panther Canyon	15	M	54
00091	Cerro Prieto	15	M	24
00092	Agua Fria Creek	03	M	3,780
00093	Tres Montosas	03	M	234
00094	Escondido Creek	03	I	1,488
00095	Datil Airstrip	03	M	48
00097	Tanque De Caballos	03	M	108
00098	Chavez Ranch	03	M	70
00099	Florenio Orona	03	I	420
00100	Gatlin Lake	03	M	576
00102	Orona Largo Creek	03	M	678
00103	Lopez Draw	03	M	59
00105	North Fork Alamocito	15	M	24
00106	Santa Rita	03	I	1,618
00107	Summers Community	03	M	271
00107	Summers Community	03	M	173
00107	Summers Community	03	M	233
00107	Summers Community	03	M	1,020
00107	Summers Community	03	M	95
00108	Reynolds	03	M	132
00109	Pattys Hole	03	M	751
00117	North Fox Mountain	03	M	108
00125	Semi Lonesome	03	I	1,682
00127	Bat Cave	03	M	11

<sup>9</sup> Authorization Type indicates whether the allotment is classified as a permit (Section 3) or a lease (Section 15) according to the Taylor Grazing Act.

**Table H-1: Grazing Allotment Statistics**

<b>Allotment No.</b>	<b>Allotment Name</b>	<b>Authorization Type<sup>9</sup></b>	<b>Management Code</b>	<b>Permitted AUMs</b>
00128	Williams Home	03	M	12
00129	R M Chavez	03	M	60
00132	W Ranch	15	M	48
00133	Tres Lagunas	15	M	288
00134	Coal Canyon	03	M	60
00135	Bill G & W F Green	15	M	252
00136	Silver Creek	15	I	1,284
00137	Pietown Dike	15	M	52
00138	Iron Mountain	15	M	132
00139	Pietown TR 15	15	M	8
00141	Sawtooth Mountain	15	M	120
00144	NM AZ State Line	15	M	48
00146	Monticello Canyon	15	M	72
00147	Kinsely Canyon	15	M	120
00148	Wahoo Ranch	15	M	1,503
00149	Williamson	15	M	60
00150	Cat Lake	15	M	192
00151	Montoya	03	M	109
00152	Dusty Ranch	03	M	24
00154	Nichols Individual	15	M	36
00155	San Ignacio	03	I	156
00164	Lew Daniels	03	M	12
00165	Snake Hill	03	M	354
00168	Tarpley	03	M	48
00192	West Emery	03	M	36
01106	Ojo Saladito	03	M	1,562
01107	Bear Springs	15	M	4
01112	Riley Community	03	M	156
01112	Riley Community	03	M	36
01112	Riley Community	03	M	60
01116	Puertecito Baranco	03	M	1,750
01117	Canon Bonito	15	M	408
01121	Rio Salado West	03	M	756
01122	Abeytas	03	M	300
01123	Abeytas	15	M	48
01125	San Ignacio Creek	03	I	804
01126	Cow Springs	03	I	1,332
01127	Santa Rita	15	M	9
01128	Patterson	03	M	1,588
01129	New Driveway	03	M	201
01136	Rio Puerco	03	M	1,176
01137	North Ladron	03	M	1,620
01140	Monte Negro	03	I	1,929
01143	Comanche Arroyo	15	I	24
01145	D Cross Mountain	15	M	356
01159	La Jencia Creek	03	I	2,013
01177	Ladron Peak	03	M	600
01181	Lopez Community	03	M	575
01181	Lopez Community	03	M	325
01186	West Ladron	03	M	2,574

**Table H-1: Grazing Allotment Statistics**

<b>Allotment No.</b>	<b>Allotment Name</b>	<b>Authorization Type<sup>9</sup></b>	<b>Management Code</b>	<b>Permitted AUMs</b>
01250	Buffalo Head	03	I	144
01251	Harless Ranch	03	M	1428
01252	Silver Road	03	I	1,608
01253	Sand Sage	03	I	240
01254	Bordo Atravesado	03	I	2,714
01255	Bosquecito	03	I	312
01256	Llano	03	M	612
01258	Tio Bartolo	03	M	365
01259	Four Hills	03	I	360
01260	Sierra Larga	03	M	2,112
01261	Scott Ranch	03	M	2,163
01262	Las Cañas	03	I	1,296
01263	Black Mesa	03	I	873
01264	Armijo Community	03	I	667
01264	Armijo Community	03	I	308
01266	Coyote Spring	03	M	1,512
01268	Ryan Hill	03	M	246
01269	Torreon Community	03	M	2,822
01269	Torreon Community	03	M	976
01270	Milligan Gulch	03	C	485
01271	Mesa Redonda	03	M	1,704
01272	San Pasqual	03	M	1,836
01273	Bruton River	03	M	1,800
01274	Rock Creek	03	C	198
01275	Oscura	03	M	5,182
01276	Four Sections	03	M	362
01277	San Jose Canyon	03	I	2,135
01278	Anaya Well	03	I	348
01279	Silver Canyon	03	I	1,298
01280	Tecolote Draw	03	I	2,388
01281	So Ranch	03	M	696
01282	Bingham	03	M	180
01283	Blackington Mountain	03	I	1,572
01284	Mesa Well Canyon	03	I	1,287
01285	Sand Mountain	03	M	1,884
01286	Blackington Mountain West	03	M	840
01288	Rio Grande	03	I	315
01289	Jornada Community	03	M	300
01289	Jornada Community	03	M	96
01289	Jornada Community	03	M	600
01289	Jornada Community	03	M	72
01289	Jornada Community	03	M	84
01289	Jornada Community	03	M	144
01290	Rock Springs Canyon	03	M	1,344
01291	Prairie Springs	03	M	1,536
01292	Chaunte Canyon	03	M	543
01293	Malpais	03	M	5,427
01294	Hickman Ranch	03	M	936
01295	Pipe Ranch	03	M	1,632
01296	Antelope West	03	M	247

**Table H-1: Grazing Allotment Statistics**

<b>Allotment No.</b>	<b>Allotment Name</b>	<b>Authorization Type<sup>9</sup></b>	<b>Management Code</b>	<b>Permitted AUMs</b>
01297	Puertecito Del Lemitar	03	M	1233
01298	Wineglass	03	M	690
01299	Pequeno	03	C	422
01300	Casas De Piedras	03	M	318
01301	White Sage	03	M	4,727
01302	So Ranch	15	M	544
01303	Jornada Individual	03	M	1,032
01305	Chato	03	M	6
01306	Veranito	03	M	445
01308	San Antonito	03	I	146
01309	S Mesa Redonda	03	M	684
01310	Chupadera Wash	03	M	525
01312	La Arenosa	03	I	535
01315	Polvadera	03	C	102
01317	San Pedro	03	I	240
01318	Pueblito Community	03	C	24
01318	Pueblito Community	03	C	34
01321	Puertecito Gap	03	M	684
01322	Parida	03	M	1,248
01323	Water Canyon	03	M	508
01324	Water Canyon	15	M	240
01327	Cedar Pass	03	M	1,035
01328	Jones	03	M	912
01329	Las Lomas	03	M	240
01330	East Well	03	M	461
01339	Twin Tanks	15	M	65
01340	Twin Tanks	15	M	155
01341	Scholle	15	M	23
01342	Cerro Pelon	15	M	300
01343	Abo	15	M	144
01344	La Jencia Ranch	15	M	708
01345	Oso Flats	15	M	96
01346	La Jencia Ranch	03	M	36
01347	Blue Springs	15	M	15
01348	Cerro Montoso	15	M	407
01349	Dripping Springs	15	M	234
01350	Viejo Arroyo	15	M	237
01351	Rienhardt Individual	15	M	216
01352	U Butte	15	M	624
01353	Red Tanks Canyon	15	M	276
01354	Granite Mountain	15	M	13
01356	Tip Top	15	M	24
01361	Brushy Mountain	15	M	166
01365	Black Hills Ranch	03	M	6,696
01366	Dragoo Tank	03	M	1,968
01367	Lobo Canyon	03	M	2,762
01368	Chupadera Mesa	03	M	7,776
01369	Lincoln County	03	M	132
01370	Cat Mesa East	03	M	1,218
01371	Cuate Canyon	03	M	858

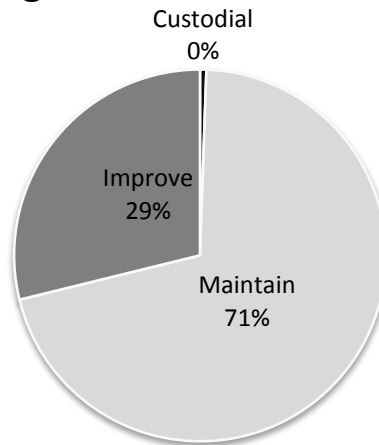
**Table H-1: Grazing Allotment Statistics**

<b>Allotment No.</b>	<b>Allotment Name</b>	<b>Authorization Type<sup>9</sup></b>	<b>Management Code</b>	<b>Permitted AUMs</b>
01372	Largo Canyon	03	M	2,592
01373	Carrizozo	03	M	2,160
01374	Red Lake	15	M	48
01375	Claunch Se	15	M	168
01376	Gallacher North	03	M	1,821
10001	Twin Peaks	03	M	134
10002	Qualls	15	M	120
10003	Qualls	03	M	132
10004	Criswell	03	M	744
10005	Horse Springs	03	M	168
10007	McBroom	03	M	180
10008	Quemado Breaks	03	I	162
10009	Sullivan	03	M	408
10010	Kellog Canyon	15	I	2,387
10011	Vevarosa	03	I	1,968
10014	Half Circle D	03	M	72
10015	Mangas	03	M	84
10016	Jones Place	03	M	144
10017	Patterson Canyon	03	M	514
10018	Tejana Mesa	03	M	1,128
10019	East Salt Lake	03	M	132
10020	Wilbur Wadley Draw	03	M	96
10023	Box Lake	03	M	2,688
10024	Coyote Canyon	03	M	4,360
10027	Burnett	03	M	108
10028	Y Ranch	03	I	4,329
10029	Cross Line	03	M	1,152
10030	Butler	03	M	864
10031	Arroyo Baca	03	M	67
10032	Adobe Ranch	03	I	7,973
10033	Castillo	03	M	50
10034	Fria Creek	03	M	168
10035	Mesa Ranch	03	M	504
10036	Toms Rock	15	M	30
10037	Wilbur Wadley Draw	15	M	120
10038	Red Hill South	03	M	1,716
10039	Pedro A Chavez Est	03	M	12
10040	Coyote Canyon	15	M	854
10041	Richard M Chavez	03	M	360
10042	Rito Creek	03	M	60
10043	Zuni Plateau	03	M	540
10045	West Salt Lake	03	M	84
10046	Walker	03	M	499
10047	Durfee	03	M	356
10048	Curtis Ranch	03	M	864
10049	Baca Spring	03	M	76
10050	Eagar Red Hill	03	M	864
10051	Emery	03	I	379
10052	Cemetery Road	15	M	25
10053	Estrada Ranch	03	I	1,764

**Table H-1: Grazing Allotment Statistics**

Allotment No.	Allotment Name	Authorization Type <sup>9</sup>	Management Code	Permitted AUMs
10055	Kiehne Place	03	M	552
10056	Headquarters	03	I	2,220
10057	Carrizo Creek North	03	M	1,536
10058	Morine-White	03	M	2,232
10059	Sitka Spruce	03	M	48
10062	Red Hill North	03	I	3,607
10063	Anderson Peak	03	M	540
10064	Evans Well	03	M	104
10065	Zuni Plateau	15	M	32
10067	East Rito Creek	03	M	540
10068	Panther Canyon	03	M	192
10069	Cerro Prieto	03	M	588
10070	Rancho Alegre	03	M	8,726
10071	North Fork Alamocito	03	M	543
10072	Mangas Ranch	03	M	2,328
10073	Heavenly Acres	03	M	192
10074	Crosby Canyon	03	M	72
10110	West Horse Mountain	03	I	732
10111	East Horse Mountain	03	I	308
10113	Big Tiny Little	15	M	3
10114	Datil Airstrip	15	M	3
10115	Largo Creek	03	M	168
10116	Spring Canyon Ranch	03	I	514
10118	Alamito Ranch	03	M	6
10119	Windrider	03	M	444
10120	Aragon Well	03	M	264
10121	Big Tiny Little	03	M	3
10122	Shay	15	M	72
10123	Goat Tank Canyon	03	M	228
10124	Hale Well	15	M	6
10126	Limestone Canyon	03	I	1,123

### Management Code Percentages





## APPENDIX I: MINERALS MANAGEMENT

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This appendix describes (1) the results of the application of unsuitability criteria for coal leasing that is part of the Federal coal lands review process, (2) standard lease terms and conditions and lease stipulations for fluid minerals leasing, and (3) existing withdrawals from mineral entry.

### APPLICATION OF SUITABILITY CRITERIA FOR COAL LEASING

As required by the Surface Mining Control and Reclamation Act of 1977, the Department of Interior has developed criteria to determine whether public lands are unsuitable for further consideration for coal leasing. This unsuitability assessment was applied to the portion of the Planning Area identified as having high coal potential (see the Energy and Minerals Potential Report dated October 2003). In the following discussion, the results of the application of each of the unsuitability criteria and exceptions are described.

The twenty unsuitability criteria contained in 43 Code of Federal Regulation (CFR 3461.5 were used to assess the unsuitability for mining in the area of high coal potential. The intent of the unsuitability criteria application is to identify the areas with resources that could not be properly protected or maintained if the area were leased for coal mining.

After initial survey of the high coal potential area, unsuitable areas (as defined by specific criteria) were identified. Following the identification and formulation of alternatives to be addressed by this Resource Management Plan and as a result of public comments submitted, affected resources within the high coal potential area were reexamined in light of the current set of unsuitability criteria.

#### ***Summary***

At this time, the area of high coal potential does not contain lands meeting unsuitability Criteria No. 1, Federal Land Systems; No. 2, Rights-of-way; No. 4, Wilderness Study Areas; No. 5, Scenic Class One Lands; No. 6, Scientific Study Areas; No. 8, Natural Areas; No. 9, Federal Listed Species/Habitats; No. 10, State Listed Species/Habitats; Criteria No. 11, Eagle Nests; No. 12, Eagle Roosts; No. 13, Falcon Nests; No. 17, Municipal Watersheds; No. 18, National Resource Waters; No. 19, Alluvial Valley Floors; and No. 20, State Criteria.

Mitigating measures have been developed which would allow lands identified as meeting Criteria No. 3, Roads and Dwellings; No. 14, High Interest Federal Species; No. 15, High Interest State Species; and No. 16, 100-year Floodplains, to be considered suitable for coal leasing.

Criteria No. 7, National Register of Historic Places and multiple-use screening criteria; No. 12, Cultural Resource Sites Eligible for Inclusion on the National Register of Historic Places; and No. 13, Native American Areas of Cultural Significance have removed lands from being suitable to coal leasing.

After applying the unsuitability criteria and multiple use screening analysis, approximately 3,200 acres are carried forward as suitable for coal leasing.

#### ***Unsuitability Criteria***

##### **3461.5(a)(I) Criterion No. 1**

All Federal lands included in the following land systems or categories shall be considered unsuitable: National Park System, National Wildlife Refuge System, National System of Trails, National Wilderness Preservation System, National Wild and Scenic Rivers System, National Recreation Areas, lands acquired with money derived from the Land

and Water Conservation Fund, National Forests, and Federal lands in incorporated cities, towns, and villages.

There are no Federal lands systems within the San Augustine Coal Area; therefore, this criterion does not apply.

**3461.5(b)(I) Criterion No. 2**

Federal lands within rights-of-way or easements or within surface leases for residential, commercial, industrial, or other public purposes. Federally owned surface shall be considered unsuitable.

There are no Federal lands rights-of-way or easements in the high coal potential area; therefore, this criterion does not apply.

**3461.5(c)(I) Criterion No. 3**

Federal lands affected by section 522(e)(4) and (5) of the Surface Mining Control and Reclamation Act of 1977 shall be considered unsuitable. This includes lands within 100 feet of the outside line of the right-of-way of a public road or within 100 feet of a cemetery, or within 300 feet of any public building, school, church, community or institutional building or public park or within 300 feet of an occupied dwelling.

Presently there is only one dwelling located on Federal lands within the high coal potential area. No cemeteries, including single grave sites or public road rights-of-way, have been identified within the area under review.

Exceptions – Lands within the area of high coal potential, which are affected by this criterion, can be considered suitable for further coal lease consideration with the following stipulation:

1. A lease may be issued for lands for which owners of occupied dwellings have given written permission to mine within 300 feet of their buildings.

**3461.5(d)(1) Criterion No. 4**

Federal lands designated as wilderness study areas shall be considered unsuitable while under review by the Administration and the Congress for possible wilderness designation. For any Federal land which is to be leased or mined prior to completion of the wilderness inventory by the surface management agency, the environmental assessment or impact statement on the lease sale or mine plan shall consider whether the land possesses the characteristics of a wilderness study area. If the finding is affirmative, the land shall be considered unsuitable, unless issuance of noncompetitive coal leases and mining on leases is authorized under the Wilderness Act and the Federal Land Policy and Management Act of 1976.

There are no WSAs in the high coal potential area; therefore, criterion does not apply.

**3461.5(e)(I) Criterion No. 5**

Scenic Federal lands designated by visual resource management analysis as Class I (an area of outstanding scenic quality or high visual sensitivity) but not currently on the National Register of Natural Landmarks shall be considered unsuitable. A lease may be issued if the surface management agency determines that surface coal mining operations will not significantly diminish or adversely affect the scenic quality of the designated area.

There are no visual resource management (VRM) Class I areas in the high coal potential area; therefore, this criterion does not apply.

**3461.5(f)(1) Criterion No. 6**

Federal lands under permit by the surface management agency, and being used for scientific studies involving food or fiber production, natural resources, or technology demonstrations and experiments shall be considered unsuitable for the duration of the study, demonstration or experiment, except where mining could be conducted in such a way as to enhance or not jeopardize the purposes of the study, as determined by the surface management agency, or where the principal scientific user or agency gives written concurrence to all or certain methods of mining.

The high coal potential area does not contain lands being utilized for this purpose.

**3461.5(g)(I) Criterion No. 7**

All publicly and privately owned places on Federal lands which are included in the National Register of Historic Places shall be considered unsuitable. This shall include any areas that the surface management agency determines, after consultation with the Advisory Council on Historic Preservation and the State Historic Preservation Officer (SHPO), are necessary to protect the inherent values of the property that made it eligible for listing in the National Register.

This area has a high density of recorded and unrecorded cultural resource sites. Much of the high coal potential area has been inventoried for cultural resources. All surveyed areas show a high density of sites, and many of the sites have been determined eligible or potentially eligible to the National Register of Historic Places.

For the remaining high coal potential areas, a literature search was performed to determine if sites eligible to the National Register were present. The literature search was conducted on areas meeting all three of the following criteria:

1. Within boundaries of high coal potential coal areas
2. Federal mineral ownership
3. Outside the boundary of the Zuni Salt Lake Sanctuary site

A total of 181 sites were identified as having been recorded in the areas meeting the three criteria. Approximately two-thirds were found to be eligible or potentially eligible to the National Register.

NOTE: These archaeological sites and socio-cultural sites clearly meet the definition of a resource of a unique nature with local or regional importance. These sites are considered under the multiple-use screen.

**3461.5(h)(I) Criterion No. 8**

Federal lands designated as natural areas or as National Natural Landmarks shall be considered unsuitable.

The high coal potential area does not contain lands designated as natural areas or National Natural Landmarks.

**3461.5(i)(I) Criterion No. 9**

Federally designated critical habitat for threatened or endangered plant and animal species, and habitat for Federal threatened or endangered species which is determined by

the Fish and Wildlife Service and the surface management agency to be of essential value and where the presence of threatened or endangered species has been scientifically documented, shall be considered unsuitable.

At this time, the high coal potential area does not contain federally designated critical habitat for threatened or endangered plant and animal species or habitat for threatened or endangered species determined to be of essential value by the U.S. Fish and Wildlife Service (USFWS) and the surface management agency.

**3461.5(j)(I) Criterion No. 10**

Federal lands containing habitat determined to be critical or essential for plant or animal species listed by a State pursuant to State law as endangered or threatened shall be considered unsuitable.

At this time, the high coal potential area does not contain Federal lands containing habitat determined to be critical or essential for plant or animal species listed by the State of New Mexico as threatened or endangered.

**3461.5(k)(I) Criterion No. 11**

A bald or golden eagle nest or site on Federal lands that is determined to be active and an appropriate buffer zone of land around the nest site shall be considered unsuitable. Consideration of availability of habitat for prey species and of terrain shall be included in the determination of buffer zones. Buffer zones shall be determined in consultation with the U.S. Fish and Wildlife Service.

Eagle nesting habitat was surveyed during the summer/fall of 1983. A Raptor Nest Report was initiated for each nest or group of nests located. Tentative buffer zones were identified. Following a nesting survey conducted during the spring of 1987, those locations identified as active were retained as unsuitable based on this criterion.

Exception – The BLM, with concurrence from the USFWS, has determined that mitigating measures are neither practical nor desirable at this time.

**3461.5(l)(I) Criterion No. 12**

Bald and golden eagle roost and concentration areas on Federal lands used during migration and wintering shall be considered unsuitable.

Year-round eagle roosting areas have been identified within the high coal potential area.

Exception – The BLM, with concurrence from the USFWS, has determined that mitigating measures are neither practical nor desirable at this time.

**3461.5(m)(1) Criterion Number 13**

Federal lands containing a falcon (excluding kestrel) cliff nesting site with an active nest and a buffer zone of Federal land around the nest site shall be considered unsuitable. Consideration of availability of habitat for prey species and of terrain shall be included in the determination of buffer zones. Buffer zones shall be determined in consultation with the USFWS.

Falcon nesting habitat located within the high coal potential area was surveyed during the summer/fall of 1983. A Raptor Nest Report was initiated for each nest or suspected nest located. Following a nesting survey conducted during the spring of 1987, those locations determined to be active were retained on the unsuitability criterion. Additional spring surveys are conducted within the high coal potential area yearly.

Results of these surveys may change the amount of Federal mineral estate determined unsuitable because of this criterion.

Exception – The BLM, with concurrence from the USFWS, has determined that mitigating measures are neither practical nor desirable at this time.

#### **3461.5(n)(1) Criterion No. 14**

Federal lands that are high priority habitat for migratory bird species of high Federal interest on a regional or national basis, as determined jointly by the surface management agency and the Fish and Wildlife Service, shall be considered unsuitable.

High priority habitat is defined as an area containing one or more limited environmental factors needed to support a population of at least one of the listed species. All high priority habitat must meet the following criteria:

1. It must be used regularly (use may be limited to one season during the year) by one or more of the listed species.
2. Its availability for uses such as feeding, reproduction, nesting, molting and/or wintering must be either limited or supportive of concentrations of a listed species in the indicated coal region or sub region.
3. It must contain a combination of natural or manmade factors; e.g., riparian vegetation, reservoirs, cliff sites, tall buildings, etc. that provide an essential quantity or quality of one or more of the habitat requirements of a listed species; i.e., food, water, cover or space.

In order to assess an area as being unsuitable for all or certain stipulated methods of coal mining, both the “high Federal interest” and the “high priority habitat” aspects of this criterion must be met; e.g., an area must support listed species and contain habitat of these species which meet all three of the above indicated habitat criteria.

The areas identified as meeting criterion No. 14 are intermittent wetlands, playas or reservoirs that contain water during the spring and early summer, produce forbs during the summer, and contain water during the fall and winter. These areas are known to be utilized during the spring and fall migrations by: white-faced ibis, western grebe, great blue heron, long-billed curlew, and large concentrations of migratory waterfowl which provide a prey base for wintering bald eagles. At this time no ferruginous hawk nest locations are known to occur on Federal mineral estate within the high coal potential area. Additional surveys will be conducted within the high coal potential area yearly. Results of these surveys may change the amount of Federal mineral estate determined to be unsuitable because of this criteria.

Exceptions – The 640 acres identified as meeting criterion No. 14 within the high coal potential area can be considered suitable for further coal lease consideration by applying the following stipulations:

1. Affected wetlands and appropriate drainages sufficient to provide equal or enhanced habitat values will be replaced by the lessee on a site-specific basis.
2. The lessee will consult with the BLM; the BLM will consult with the surface owner, USFWS and New Mexico Department of Game and Fish (NMDGF) prior to alteration of the affected wetland.

#### **3461.5(o)(1) Criterion Number 15**

Federal lands which the surface management agency and the State jointly agree are fish and wildlife habitat for resident species of high interest to the State and which are essential for maintaining these priority wildlife species shall be considered unsuitable.

The areas identified under criterion No. 14 can also be applicable to criterion No. 15; in addition, the NMDGF has identified mule deer and Ferruginous Hawks. Pronghorn Antelope are included under this criterion because of the occurrence of an isolated herd utilizing a restricted habitat on a mesa top in the area.

Areas identified as mule deer winter range within the high coal potential area are also adjacent to or included in the areas covered by criterion No. 12, eagle roosting areas. Mule deer wintering range (80 acres) are included under this criterion.

Those areas identified under criterion No.14 are included in the exception for that criterion.

Exceptions – The areas identified as prairie dog locations will be suitable for further coal lease consideration by incorporating the following stipulations:

1. Proposed activities in or adjacent to the identified area will be preceded by a complete black-footed ferret inventory of the prairie dog colony.
2. All black-footed ferret inventory and survey procedures conducted by the lessee will be reviewed and approved by the BLM, in consultation with the USFWS and the NMDGF.

### **3461.5(p)(l) Criterion No. 16**

Federal lands in riverine, coastal and special floodplains (100-year recurrence interval) on which the surface management agency determines that mining could not be undertaken without substantial threat of loss of life or property shall be considered unsuitable for all or certain stipulated methods of coal mining.

The first drainages that were analyzed for 100-year floodplain determination were those that drained at least 10 square miles. Watersheds were delineated and tentative floodplain transect locations established. Two or more transects were run for each probable floodplain location using the stadia method. Channel cross sections were drawn and flood stages marked on them. The U.S. Geological Survey method from Water Resources Investigations 82-24, “Techniques for Estimated Flood Discharges for Unregulated Streams in New Mexico”, and H. R. Hejl, Jr.’s (U.S. Geological Survey) draft paper “Stream flow Characteristics as Related to Basin Characteristics in Strippable Coal-Resource Areas of Northwestern New Mexico” were used to determine the 100-year flood discharge. The resultant discharges computed using the two different methods were very close. Using the Manning’s equation and knowing the channel geometry and stage relationship, the 100-year floodplain was then determined and drawn on 7.5-minute topographic maps. The floodplains were later verified with aerial photographs. To accurately determine the 100-year floodplain, USGS said that about 20 floodplain transects per area are needed and the floodplains should be mapped on one-foot contour interval maps. Due to the tight budget, large area, and lack of manpower, it was not possible to delineate the floodplains to that degree of accuracy.

Playas were delineated by aerial photo interpretation, vegetative types, and field observations. Four large detention dams that hold between 55 and 152 acre-feet of water were also considered unsuitable.

Although the 1,800 acres delineated as floodplains are blocked out in 40-acre tracts, the actual floodplain usually represents a much smaller area. Actual floodplain boundaries have been digitized and maps are available for reviewing at the Socorro Field Office.

All of the 100-year occurrence floodplains in the high coal potential area can be mitigated because they do not represent a substantial threat to life or property.

**3461.5(q)(I) Criterion No. 17**

Federal lands which have been committed by the surface management agency to use as municipal watersheds shall be considered unsuitable.

At this time, the high coal potential area does not contain any municipal watersheds.

**3461.5(r)(I) Criterion No. 18**

Federal lands with national resource waters, as identified by states in their water quality management plans, and a buffer zone of Federal lands ¼ mile from the outer edge of the far banks of the water, shall be unsuitable.

At this time, the high coal potential area does not contain lands identified by the State of New Mexico as meeting this criterion.

**3461.5(s)(1) Criterion No. 19**

Federal lands identified by the surface management agency, in consultation with the State in which they are located, as alluvial valley floors according to the definition in 3400.0-5(a) of this title, the standards in 30 CFR Part 822, the final alluvial valley floor guidelines of the Office of Surface Mining Reclamation and Enforcement when published, and approved State programs under the Surface Mining Control and Reclamation Act of 1977, where mining would interrupt, discontinue, or preclude farming, shall be considered unsuitable. Additionally, when mining Federal land outside an alluvial valley floor would materially damage the quantity or quality of water in surface or underground water systems that would supply alluvial valley floors, the land shall be considered unsuitable.

At this time, the high coal potential area does not contain lands identified as alluvial valley floors (30 CFR Chapter VII).

**3461.5(t)(I) Criterion No. 20**

Federal lands in a state to which is applicable a criterion (i) proposed by that state or Indian tribe located in the planning area, and (ii) adopted by rule making by the Secretary, shall be considered unsuitable.

At this time, the State of New Mexico has not proposed nor has the Secretary adopted any special or additional criterion other than those criterion presented in Parts 2, 3, and 4 of the New Mexico Coal Surface Mining Commission Rule 80-1 which corresponds with segments of the Federal 3461.1 regulations.

***Multiple-Use Conflict Analysis***

The multiple-resource use screens are intended to eliminate lands from further consideration for coal leasing if other resources on those lands are determined to be locally important or unique. In general, a multiple-use trade-off is appropriate when one land use (e.g., mining) would be likely to preclude or limit use of other valuable resources not otherwise covered by the 20 unsuitability criteria. The readjustments at this stage in the land use planning process are made to accommodate unique, site-specific resource values clearly superior to coal but which are not included in the unsuitability criteria. A prime recreation site or campground might be an example.

The multiple-use analysis weighs the effects of the additional multiple-use screens on the areas, which have passed the previously mentioned screens. The results of these analyses are summarized below. It

should be noted that additional inventory for cultural resources, raptor nests, etc., could require the reapplication of multiple-use and unsuitability criteria screens at the coal activity planning stage.

### ***Multiple-Use Screening Analysis***

#### **No. 1: Wetlands**

Wetlands larger than one acre will be considered unacceptable.

*Definition:* BLM Manual 6740 defines wetlands as follows:

“Permanently wet or intermittently flooded areas where the water table (fresh, saline, or brackish) is at, near, or above the soil surface for extended intervals, where hydric wet soil conditions are normally exhibited, and where water depths generally do not exceed two meters. Vegetation is generally comprised of emergent water-loving forms (hydrophytes), which require at least a periodically saturated soil condition for growth and reproduction. In certain instances vegetation may be completely lacking. Marshes, shallows, swamps, muskegs, lake bogs, and wet meadows are examples of wetlands.”

These are poorly drained areas, as a rule having impervious soils (no substantial groundwater recharge). They may on occasion be in contact with the groundwater system, but for the most part they receive water from precipitation and overland runoff.

The above definition will be used for the multiple-use screen with the following modification. Marshes, shallows, swamps, and wet meadows less than one acre will not be considered under this definition. It will not include saltgrass flats associated with intermittent arroyos or small seasonally flooded livestock reservoirs that do not support emergent vegetation.

*Analysis:* There are no wetlands larger than one acre in the areas under consideration. This analysis is based on field inventories.

#### **No. 2: Riparian Habitat**

Riparian habitat will be considered unacceptable.

*Definition:* Manual 6740 defines riparian habitat as follows:

“A specialized form of wetland restricted to areas along, adjacent to, or contiguous with perennially and intermittently flowing rivers and streams, also, periodically flooded lake and reservoir shore areas, as well as lakes with stable water levels with characteristic vegetation. This habitat is transitional between true bottomland wetlands and upland terrestrial habitats and, while associated with water courses, may extend inland for considerable distances. Soils of the riparian habitat may not exhibit typical wet soil characteristics of other wetlands. If not, wet soil characteristics will exist close enough to the surface for the water to be used directly by vegetation. This vegetation may range from water-loving hydrophytes (such as pond weeds) through terrestrial forms (such as sycamores, cottonwoods, and willows).”

In these areas, soil and soil structure permit groundwater movement both vertically and horizontally. Groundwater recharge can occur.

For the purpose of the multiple-use screen the above definition will be used with the following condition: isolated cottonwood trees, tamarisk stands less than one acre, and desert arroyos with greasewood,



rabbitbrush, or fourwing saltbush borders will not be considered as riparian habitat. They are more properly treated as special habitat features.

*Analysis:* Using the above definition, there is no riparian habitat in any of the areas under consideration. This analysis is based on field inventories.

### **No. 3: Proposed Threatened and Endangered Species**

Habitat supporting populations or individuals of species proposed for Federal or State listing as threatened or endangered will be considered unacceptable.

*Analysis:* There are no proposed threatened or endangered species known to be within any of the areas under consideration. This analysis is based on field inventories and consultations with the USFWS and NMDGF.

### **No. 4: Federal Lands Contiguous to the National Trail System and the National Wilderness System**

Federal lands within 0.5 mile of units of the National System of Trails, and the National Wilderness Preservation System, shall be considered unacceptable.

*Analysis:* There are no Federal land systems within 0.5 mile of any of the areas under consideration.

### **No. 5: Class II VRM Areas**

Areas that contain VRM Class II objectives shall be considered unacceptable for surface coal mining.

*Analysis:* There are no areas under consideration that are managed under VRM Class II management objectives.

### **No. 6: Areas of Significant Recreation Use or Opportunity**

Special Recreation Management Areas and areas that contain Recreation Opportunity Spectrum management objective for the primitive class shall be considered unacceptable for surface coal mining.

*Analysis:* There are no areas managed as Special Recreation Management Areas or Recreation Opportunity Spectrum Primitive class management objectives in the high coal potential area.

### **No. 7: Sole-Source Aquifers**

An area formally designated by the Environmental Protection Agency (EPA) as a sole-source aquifer shall be considered unacceptable.

*Analysis:* The sole-source aquifer program under the Safe Drinking Water Act permits citizens to petition EPA for designation of an area as a sole-source aquifer if it is the principal water supply. If so designated, EPA reviews all federally assisted projects, which may affect the quality of groundwater in the sole-source aquifer.

There have been no sole-source aquifer designations in the high coal potential area under this program to date.

## **No. 8: Air Quality**

Lands within 15 miles of air quality Class I Prevention of Significant Deterioration areas shall be considered unacceptable.

*Analysis:* There are no Class I Prevention of Significant Deterioration areas within or adjacent to the high coal potential area.

## **No. 9: Reserved Federal Lands**

All Federal lands included in the following land systems or categories shall be considered unacceptable: Federal Aviation Administration facilities; all site withdrawals (administrative, school, etc.) for Federal agencies and leases acquired under the Recreation and Public Purposes Act.

*Analysis:* There are no Federal lands within the high coal potential area under consideration which are reserved for Federal Aviation Administration facilities, site withdrawals for Federal agencies (administrative, school, etc.) or leases acquired under the Recreation and Public Purposes Act.

*Exception:* A lease may be issued and mining operations approved if, after consultation with the affected Federal agency or lessee, the surface management agency determines that the facility will not be adversely affected by all or certain stipulated methods of coal mining.

## **No. 10: Right-of-Way Windows or Corridors**

Federal lands which have been committed by the surface management agency to use as rights-of-way windows or corridors shall be considered unacceptable.

*Analysis:* No Federal lands that have been designated or recommended for designation, as rights-of-way windows or corridors, are within the areas under consideration.

## **No. 11: Paleontological Resources**

Any paleontological resources which are type localities for fauna that define regional or larger time-stratigraphic units, and special management areas set aside for their paleontological values, shall be considered unacceptable. However, coal mining can be allowed if the authorized officer (in consultation with affected Federal/State agencies) determines that mining activities will enhance and facilitate access and scientific evaluation of paleontological resources.

*Analysis:* This multiple-use screen does not apply to any areas under consideration with the high coal potential area.

## **No. 12: Cultural Resource Sites Eligible for Inclusion on the National Register of Historic Places**

All properties which have been determined eligible for the National Register of Historic Places and which are of exceptional complexity, or areas of properties which must be considered together to achieve adequate mitigation through data recovery, shall be considered unacceptable. This shall include areas that the surface managing agency determines, after consultation with the SHPO and the Advisory Council on Historic Preservation, are necessary to protect the inherent values of the property that made it eligible for the National Register.

Prior to approval of surface-disturbing activities, Class III inventories will be conducted and subsequent mitigation of impacts will be required on all National Register eligible sites. Consultation between the BLM, the Office of Surface Management, and SHPO will occur to determine if newly recorded sites are eligible for inclusion in the National Register. If adequate mitigating measures for impacts to these site(s) cannot be developed, the sites and appropriate buffer zones will not be surface-mined or allowed to be disturbed by underground mining activities.

*Analysis:* This area has a high density of recorded and unrecorded cultural resource sites. Much of the high coal potential area has been inventoried for cultural resources, and much of the inventory related to coal extraction proposals. All surveyed areas show a high density of sites, and many of the sites have been determined eligible or potentially eligible to the National Register of Historic Places (National Register). A large portion of the high coal potential area falls within the boundaries of the Zuni Salt Lake Sanctuary site, which has been determined eligible to the National Register. These areas were eliminated from further consideration for coal leasing.

For the remaining high coal potential area, a literature search was performed to determine if sites eligible to the National Register were present. The literature search was conducted on areas meeting all three of the following criteria:

1. Within boundaries of high coal potential coal areas
2. Federal mineral ownership
3. Outside the boundary of the Zuni Salt Lake Sanctuary site

A total of 181 sites were identified as having been recorded in the areas meeting the three criteria. Approximately two thirds were found to be eligible or potentially eligible to the National Register. These areas were eliminated from further consideration for coal leasing.

### **No. 13: Native American Areas of Cultural Significance**

Federal lands containing specific sites that have been identified as sacred and essential to the practice of traditional Native American religion shall be considered as unacceptable. This shall also include any areas that the surface management agency determines, after consultation with the appropriate tribal representative, as necessary to protect the inherent values of the area and to ensure that the natural character of the area remains unaltered so it may continue to be used for prayer or other religious practices.

*Analysis:* An overview of Native American traditional use of the original SACA region (Kelly in Camilli et al. n.d.) has shown that this screen may apply to sites, localities, and linear features (trails). A large portion of the high coal potential area falls within the boundaries of the Zuni Salt Lake Sanctuary site, which has been determined eligible to the National Register. These areas were eliminated from further consideration for coal leasing.

### **FLUID MINERALS LEASING**

Federal fluid minerals are made available for leasing through the Minerals Leasing Act of 1920, as amended, and the Geothermal Steam Act of 1970. The Minerals Leasing Act of 1920, as amended, provides the Secretary of the Interior with authority to issue leases on lands where the mineral rights are held by the Federal government. This authority has been delegated to the BLM State Directors. The BLM is required to determine (1) which lands are suitable and available for leasing and subsequent development and (2) how those leased lands will be managed. On lands administered or owned by an entity other than the BLM (referred to as split estate), the BLM's environmental objectives and

constraints apply equally to these areas; however, such constraints are developed at the permit stage in consultation with the other surface-managing agency or surface owner. Wilderness study areas are closed to mineral leasing by the Mineral Leasing Act of 1920.

A lease is a contract that conveys to an operator the right to develop and produce fluid minerals for a specific period of time under certain agreed-upon terms and conditions. The issuance of a lease grants to the lessee exclusive rights to as much of the leased land as is needed to conduct exploratory drilling and development operations in the leasehold subject to stipulations attached to the lease; restrictions derived from specific nondiscretionary statutes; and reasonable measures as may be required by the surface-management agency to minimize adverse impacts on other resource values, land uses, or users.

Before consent can be given for leases to be issued by the BLM, regulations require (1) verifying that leasing on specific lands is consistent with the land use plan; (2) ensuring that conditions of surface occupancy are properly included (as stipulations) in resulting leases; and (3) determining that operations and development could be allowed somewhere on each proposed lease except where a stipulation would prohibit all surface occupancy.

### ***Standard Lease Terms and Conditions***

Areas may be open to leasing with no specific management decisions defined in a resource management plan. However, these areas are subject to the lease terms and conditions as defined on the appropriate lease form (Form 3100-11, Offer to Lease and Lease for Oil and Gas; and Form 3200-24, Offer to Lease and Lease for Geothermal Resources). The forms include lease terms and conditions that address subjects such as bonding, rentals, royalties, inspections, and safety. Of particular interest for this discussion is Section 6, Conduct of Operations, of the lease form, which establishes the general and reasonable requirements for the protection of surface resources and is referred to as “standard lease terms and conditions.” The Authorized Officer has the right to relocate proposed facilities, control timing of operations, and impose other mitigation in accordance with Sections 2 and 6 of the standard oil and gas lease terms. Each proposed site would be investigated and, if site-specific conditions warrant more restrictive protection, such protective measures could be imposed through conditions of approval at the time of an application for permit to drill.

In addition, the standard lease terms and conditions specifically require that the lessee contact the lessor prior to disturbing the surface. They also specify that the lessee may be required to complete inventories or special studies in accordance with the Endangered Species Act of 1973, National Historic Preservation Act (NHPA) of 1966, and other applicable laws.

### ***Fluid Mineral Lease Stipulations***

Constraints in the form of stipulations are conditions included in a lease when environmental and planning analyses have demonstrated that additional and more stringent environmental protection is needed. Stipulations are provisions that modify the standard lease rights and are made part of the lease. The operator would be expected to comply with the stipulations that are attached to a lease. Lands currently under lease would not be affected by the stipulations identified in this Resource Management Plan Revision/Environmental Impact Statement. New leases would be required to adhere to the stipulations as identified in the Resource Management Plan Revision upon its completion.

Fluid mineral stipulations that apply to specific locations within the Planning Area include:

**Table I-1: Fluid Mineral Lease Stipulation Codes**

NM-5	White Sands Missile Range Safety Evacuation Zone
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NM-6	Continental Divide Trail
S-CSU-C1	Protection of Cultural Resources
S-CSU-C2	Protection of Cultural Resources
S-CSU-C3	Protection of Cultural Resources
S-CSU-C4	Protection of Cultural Resources
S-CSU-K	Potential Cave or Karst Occurrence Area
S-CSU-P	Protection of Paleontological Resources
S-CSU-R	Protection of Riparian Areas
S-CSU-S	Protection of Slopes and Fragile Soils
S-CSU-V	Protection of Natural Values
S-CSU-W1	Protection of Wildlife Resources
S-CSU-W2	Protection of Wildlife Projects
S-CSU-W3	Protection of Raptor and Prairie Dog Habitat
S-CSU-W4	Protection of Potential Northern Aplomado Falcon Habitat
S-CSU-Z	Protection of Zuni Salt Lake
S-NSO-C	No Surface Occupancy to Protect Cultural Resources
S-NSO-R	No Surface Occupancy to Protect Special Recreation Areas
S-NSO-T&E	No Surface Occupancy to Protect Threatened or Endangered Species
S-NSO-V	Protection of Natural Resources
S-NSO-W	No Surface Occupancy to Protect Wildlife Resources
S-VRM-II	Protection of Visual Resource Management Class II Areas

Additional information on the purpose of each stipulation and the type of conditions that would be applied to a lease are described below.

#### **NM-5 – White Sands Missile Range Safety Evacuation Zone**

- **For the purpose of:** Providing notice to lessees that they may be required to periodically evacuate this area when White Sands Missile Range conducts missile firings.
- **Waiver:** None
- **Exception:** None
- **Modification:** None
- **Justification:** To ensure that the lessee is aware that White Sands Missile Range conducts testing of missiles during which times White Sands Missile Range requires that the area be evacuated. Closing the area to leasing or attaching a stipulation to this lease is deemed overly restrictive since the area is viable for fluid minerals development during other times.
- **Stipulation:** Prior to beginning exploration activities, the lessee must contact the U.S. Army Corps of Engineers in Albuquerque and the Master Planning Branch at White Sands Missile Range to be advised of terms of the safety evacuation agreement and missile-firing schedules.
- Specific locations of the White Sands Missile Range Safety Evacuation Zone should be verified in the Socorro Field Office.

## NM-6 – Continental Divide Trail

No occupancy or other surface-disturbance will be allowed within 1,000 feet of the Continental Divide National Scenic Trail Treadway. This distance may be modified when specifically approved in writing by the Socorro Field Office of the BLM.

### S-CSU-C1 – Protection of Cultural Resources

- **For the purpose of:** Protection of highly significant and sensitive historic and prehistoric resources that might not be detected by means of standard Class III cultural resource surface inventory from direct and indirect effects of lease development.
- **Waiver:** None
- **Exception:** Requests for exception would be based on a case-by-case basis sensitivity evaluation and on available information regarding site-specific soil stability, site probability and any proposal for alternate forms of mitigation.
- **Modification:** None
- **Justification:** Nationally significant sites of both prehistoric and historic origin are located in the area. Many of these sites are not easily identified through standard Class III cultural resource inventory.
- **Stipulation:** Access to the lease will be limited to routes designated in the approved permit for lease operations. Applications for surface disturbing aspects of lease development will be evaluated for potential proximity to sensitive nationally significant cultural resources (known and suspected) and could require expanded pre-field records search, subsurface testing and/or metal detector survey in addition to routine cultural resource surface inventory for compliance with Section 106 of the NHPA, the costs of which will be borne by the lessee. This could result in extended time frames for processing authorizations for development activities.
- All proposed surface-disturbing aspects of lease development will be located to avoid and/or protect the cultural resources present.

### S-CSU-C2 – Protection of Cultural Resources

- **For the purpose of:** Ensuring that highly sensitive subsurface sites of national significance are not destroyed because they lack surface manifestations.
- **Waiver:** None
- **Exception:** Requests for exception would be addressed on a case-by-case basis and evaluated based on available information regarding site-specific soil stability, site probability, and proposals for alternate forms of mitigation.
- **Modification:** None
- **Justification:** Archaeological sites in this area are extremely significant, rare, and fragile. Standard compliance with Section 106 of the NHPA through Class III surface inventory is not sufficient to protect vulnerable resources of national significance. Subsurface testing is necessary to ensure that highly sensitive sites are not destroyed due to a lack of surface features and artifacts.
- **Stipulation:** Access will be limited to designated routes. All surface-disturbing aspects of lease development will require subsurface testing in addition to cultural resource surface inventory for compliance with Section 106 of the NHPA.

### S-CSU-C3 – Protection of Cultural Resources

- **For the purpose of:** Ensuring that highly sensitive sites of national significance are not destroyed.

- **Waiver:** None
- **Exception:** Requests for exception would be addressed on a case-by-case basis and evaluated based on available information regarding site-specific soil stability, site probability, and proposals for alternate forms of mitigation.
- **Modification:** None
- **Justification:** Archaeological sites in this area are extremely significant, rare, and fragile. Standard compliance with Section 106 of the NHPA through Class III surface inventory is not sufficient to protect vulnerable resources of national significance. Subsurface testing is necessary to ensure that highly sensitive sites are not destroyed due to a lack of surface features and artifacts.
- **Stipulation:** All drill sites will be located adjacent to designated routes. All surface-disturbing aspects of lease development will require subsurface testing in addition to cultural resource surface inventory for compliance with Section 106 of the NHPA.

#### **S-CSU-C4 – Protection of Cultural Resources**

- **For the purpose of:** Ensuring that highly sensitive sites of national significance are not destroyed.
- **Waiver:** None
- **Exception:** None
- **Modification:** None
- **Justification:** Archaeological sites in this area are extremely significant, rare, and fragile. Standard compliance with Section 106 of the NHPA through Class III surface inventory is not sufficient to protect vulnerable resources of national significance.
- **Stipulation:** All proposed surface-disturbing aspects of lease development may be moved to protect the cultural resources present.

#### **S-CSU-K – Potential Cave or Karst Occurrence Area**

- **For the purpose of:** Protecting cave and karst resources.
- **Waiver:** Waiver of this requirement will be considered for projects that enhance or protect renewable natural resource values, or when an approved plan of operations ensures the protection of cave and karst resources.
- **Exception:** None
- **Modification:** None
- **Justification:** Stipulating controlled surface use is deemed necessary based on the need to protect cave and karst resources in these areas.
- **Stipulation:** All or portions of the lease are located in a potential cave or karst occurrence area. Within this area, cave or karst features such as sinkholes, passages, and large rooms may be encountered from the surface to a depth of as much as 2,000 feet, within areas ranging from a few acres to hundreds of acres. Due to the sensitive nature of the cave or karst systems of this area, special protective measures may be developed during environmental analyses and be required as part of approvals for drilling or other operations on this lease. These measures could include changes in drilling operations, special casing and cementing programs, modifications in surface activities, or other reasonable measures to mitigate impacts to cave or karst values.

- Surface disturbance will not be allowed within up to 200 meters of known cave entrances, passages or aspects of significant caves, or significant karst features.

#### **S-CSU-P – Protection of Paleontological Resources**

- **For the purpose of:** Ensuring that sensitive paleontological sites of national significance are not destroyed.
- **Waiver:** None
- **Exception:** None
- **Modification:** None
- **Justification:** Paleontological sites in this area are extremely significant, rare, and fragile.
- **Stipulation:** A paleontological survey by a qualified paleontologist must be conducted prior to any surface-disturbing activities. All proposed surface-disturbing activities of lease development must be located to avoid and/or protect the paleontological resources present.

#### **S-CSU-R – Protection of Riparian Areas**

- **For the purpose of:** Protection of riparian habitat for purposes of preventing further habitat fragmentation and loss of use of otherwise suitable/effective habitat.
- **Waiver:** If circumstances or relative resource values change or if the lessee demonstrates that the operations can be conducted without causing unacceptable impacts, or in emergency situations or if the disturbance or impacts associated with the proposed activity is of short duration, such as a habitat or range improvement project, and will not result in permanent adverse impacts to the landscape or degrade wildlife habitat, exceptions or waivers will be considered with appropriate mitigation, as determined by the Authorized Officer at the time of permitting.
- **Exception:** Based on a site-specific evaluation by the Authorized Officer if an approved plan of operations assures the protection of water, soil, and habitat resources.
- **Modification:** Based on a site-specific evaluation by the Authorized Officer if an approved plan of operations assures the protection of water, soil, and habitat resources.
- **Stipulation:** Surface-disturbing or long-term noise producing activities which exceed a noise level of 75 A-weighted decibels (75dbA), measured at the perimeter of the 400-meter protective spatial buffer, will not be allowed within 400 meters of riparian areas (springs, seeps, tanks, rivers, streams, playas, canyon bottoms, and floodplains). If the 75dbA noise level is determined to not provide adequate protection from the auditory impact created by lease operations, a stricter level shall be applied prior to authorizing lease operations. The BLM Authorized Officer will work with lease holder on a case-by-case basis to achieve an acceptable level of noise mitigation. A more restrictive spatial buffer may be applied where the 400-meter spatial buffer has been documented to not provide adequate protection. Appropriate modifications to the imposed restrictions will be made for the maintenance and operations of producing oil and gas wells.

#### **S-CSU-S – Protection of Slopes and Fragile Soils**

- **For the purpose:** Protection of fragile soils and natural resources.
- **Waiver:** None
- **Exception:** Exceptions will be made if the operator can show that operations can be conducted without adversely affecting the protected resources.



- **Modification:** Based on a site-specific evaluation by the Authorized Officer, appropriate modifications to the imposed restrictions will be made for the maintenance and operations of producing oil and gas wells.
- **Stipulation:** All or portions of the lease area contain slopes over 30 percent and/or fragile soils that require special protection to prevent further resource degradation. Surface disturbance will not be allowed on slopes over 30 percent. Occupancy upon areas containing fragile soils will be evaluated and special measures applied to prevent erosion of fragile soils.

#### **S-CSU-V – Protection of Natural Values**

- **For the purpose of:** Protection of unique scenic and natural values from the direct and indirect impacts of lease development.
- **Waiver:** Requests for waiver would be addressed on a case-by-case basis and evaluated based on available information regarding the proposed activity or disturbance, possible mitigations, and considering the site-specific scenic and natural values.
- **Exception:** Based on an individual case sensitivity evaluation by the Authorized Officer.
- **Modification:** None
- **Justification:** The protection of the special scenic and natural values.
- **Stipulation:** Access will be limited to routes designated in the approved permit for lease operations. Applications for surface-disturbing activities will be evaluated for their proximity to the mature yucca stands and for their short and long-term impacts to the special aesthetic and natural values of the dense stands of mature yuccas that dominate the desert scenery.

#### **S-CSU-W1 – Protection of Wildlife Resources**

- **For the purpose of:** Protection of a designated Area of Critical Environmental Concern for wildlife resources.
- **Waiver:** Upon request, if circumstances or relative resource values change or if the disturbance or impacts associated with the proposed activity is of short duration, such as a habitat or range improvement project, and will not result in continued activity or permanent adverse impacts to the landscape or resources of concern, exceptions or waivers will be considered with appropriate mitigation, as determined by the Authorized Officer at the time of permitting.
- **Exception:** None
- **Modification:** Based on a site-specific evaluation by the Authorized Officer, appropriate modifications to the imposed restrictions will be made for the maintenance and operations of producing oil and gas wells.
- **Stipulation:** All or portions of the lease area contain special wildlife habitat features that require special protection to prevent further degradation or damage. Applications for surface-disturbing or long-term noise producing activities, which exceed a noise level of 75dbA at the edge of the well pad, will be authorized only when lessee/operator demonstrates that the area is essential for operations and when the lessee/operator submits a satisfactory surface use and operations plan that provides protection for these special resource values. If the 75dbA noise level is determined to not provide adequate protection from the auditory impact created by lease operations, a stricter level shall be applied as a condition of approval for lease operations. The BLM Authorized Officer will work with the lease holder on a case-by-case basis to achieve an acceptable level of noise mitigation.

### S-CSU-W2 – Protection of Wildlife Habitat Projects

- **For the purpose of:** Protection of wildlife habitat enhancement projects for purposes of preventing further habitat fragmentation and loss of use of otherwise suitable/effective habitat.
- **Waiver:** If circumstances or relative resource values change or if the lessee demonstrates that the operations can be conducted without causing unacceptable impacts, or in emergency situations or if the disturbance or impacts associated with the proposed activity is of short duration, such as a habitat or range improvement project, and will not result in permanent adverse impacts to the landscape or degrade wildlife habitat, exceptions or waivers will be considered with appropriate mitigation, as determined by the Authorized Officer at the time of permitting.
- **Exception:** None
- **Modification:** Based on a site-specific evaluation by the Authorized Officer.
- **Stipulation:** Surface-disturbing or long-term noise producing activities which exceed a noise level of 75dbA, measured at the perimeter of the 400-meter protective spatial buffer, will not be allowed within 400 meters of existing or planned wildlife habitat improvement projects. If the 75dbA noise level is determined to not provide adequate protection from the auditory impact created by lease operations, a stricter level shall be applied as a condition of approval for lease operations. A more restrictive spatial buffer may be applied where the 400-meter spatial buffer has been documented to not provide adequate protection. Use and occupancy within the 400-meter spatial buffer will be authorized only when lessee/ operator demonstrates that the area is essential for operations and when the lessee/operator submits a satisfactory surface use and operations plan, which adequately protects resources of concern. This requirement will be considered for a waiver with appropriate off-site mitigation, if the proposed activity is of short duration (e.g., habitat enhancement project, fences, pipelines), and will not result in continued activity in proximity to the habitat project, as determined by the Authorized Officer.
- Appropriate modifications to the imposed restrictions will be made for the maintenance and operations of producing oil and gas wells.

### S-CSU-W3 – Protection of Raptor and Prairie Dog Habitat

- **For the purpose of:** Protection of raptor and prairie dog habitat.
- **Waiver:** Waivers will be considered with appropriate mitigation, as determined by the Authorized Officer at the time of permitting in the following situations: relative resource values change, the lessee demonstrates that the operations can be conducted without causing unacceptable impacts, in emergency situations, or if the disturbance or impacts associated with the proposed activity are of short duration, such as a habitat or range improvement project, and will not result in permanent adverse impacts to the landscape or degrade wildlife habitat.
- **Exception:** Based on a site-specific evaluation by the Authorized Officer.
- **Modification:** Based on a site-specific evaluation by the Authorized Officer.
- **Stipulation:** Prior to survey/flagging locations for pads, routes for roads, and any other preliminary activity, the project area will be surveyed for raptor nests. Surveys will be conducted by professional biologists approved by the Authorized Officer. All raptor nests, Bald Eagle wintering areas, and prairie dog colonies, will be avoided by the distances and seasonal periods listed below.

Species	Minimum Distance	Season
Aplomado Falcon	0.5 mile	January 1-July 31

Eagle	0.5 mile	February 1-July 15
Ferruginous Hawk	0.5 mile	February 1-July 15
Prairie Falcon	0.5 mile	March 1-August 1
All other raptor species	0.5 mile	during observed nest establishment through fledgling
Black-Tailed Prairie Dog	0.25 mile	January 1-June 15
Gunnison Prairie Dog	0.25 mile	February 15-June 15

Long-term surface use activities will not be allowed within the species-specific spatial buffer zone of active nests or occupied prairie dog towns listed above. Short-term activities will be avoided within the species-specific spatial buffer zones during the dates listed above. All other raptor species nests will be avoided by the spatial buffer zone only during the period listed above, regardless of the duration of the activity. Before surface use activities may commence a raptor and prairie dog survey must be completed.

A short-term activity is defined as an activity, which would begin outside of a given breeding season and end prior to initiation of a given breeding season. A long-term activity is defined as an activity which would continue into or beyond a given nesting/breeding season. An active nest is defined as any nest that has been occupied in the last seven years. A nest will be determined active or inactive by the Authorized Officer.

#### **S-CSU-W4 – Protection of Potential Northern Aplomado Falcon Habitat**

- **For the purpose of:** Habitat protection for a Federally listed endangered species.
- **Waiver:** Waivers will be considered with appropriate mitigation, as determined by the Authorized Officer at the time of permitting in the following situations: relative resource values change, the lessee demonstrates that the operations can be conducted without causing unacceptable impacts, in emergency situations, or if the disturbance or impacts associated with the proposed activity are of short duration, such as a habitat or range improvement project, and will not result in permanent adverse impacts to the landscape or degrade wildlife habitat.
- **Exception:** Based on a site-specific evaluation by the Authorized Officer.
- **Modification:** Based on a site-specific evaluation by the Authorized Officer.
- **Stipulation:** Surface use or occupancy is subject to the following special operating constraints in areas identified as having habitat potential for northern Aplomado Falcons. The lease operator is required to submit a Plan of Development for the entire leasehold prior to commencing drilling activity. Requests for exceptions or changes to the Plan of Development are not allowed without approval by the BLM authorized officer. Prior to surveying/flagging locations for pads, routes for roads, and other preliminary activities, a protocol northern Aplomado Falcon survey must be completed. In areas determined to have potential habitat, specialized surface use and occupancy requirements will be applied as conditions of approval for all surface-disturbing activities, including preliminary investigations.

#### **S-CSU-Z – Protection of Zuni Salt Lake**

- **For the purpose of:** To protect the aquifers that feed Zuni Salt Lake.
- **Waiver:** None
- **Exception:** None
- **Modification:** None
- **Justification:** Protection of Zuni Salt Lake and other significant sites and resources in the area.

- **Stipulation:** No diversions from the Moreno Hill Formation and other underlying aquifers within the Carrizo Wash watershed without re-injection and with the following conditions to protect the hydrologic balance and chemistry of the Zuni Salt Lake:
  1. Define disposal locations to mitigate all effects on the Zuni Salt Lake.
  2. Produced water must be re-injected into the same aquifer, and water quality must be compatible with the injection interval.
  3. Produced water shall be returned by vacuum.
  4. All wells will be plugged and abandoned after use, not converted to water wells, according to State and Federal guidelines.

#### **S-NSO-C – No Surface Occupancy to Protect Cultural Resources**

- **For the purpose of:** Protection of highly sensitive cultural resource sites from direct and indirect impacts of lease development, including increased access and erosion.
- **Waiver:** Requests for waiver would be addressed on a case-by-case basis and evaluated based on available information regarding site-specific soil stability, site probability, and proposals for alternate forms of mitigation.
- **Exception:** None
- **Modification:** None
- **Justification:** Stipulating no surface occupancy is deemed necessary to protect archaeological sites which are extremely significant, rare, and fragile. Standard compliance with Section 106 of the NHPA through Class III surface inventory is not sufficient to protect vulnerable resources of national significance.

#### **S-NSO-R – No Surface Occupancy to Protect Special Recreation Areas**

- **For the purpose of:** Protection of a high value recreation site and activity area from direct and indirect impacts of lease development.
- **Waiver:** Requests for waiver will be addressed on a case-by-case basis and evaluated based on available information regarding the proposed activity or disturbance, possible mitigation and considering the site-specific scenic, natural, recreational, and cultural values.
- **Exception:** Based on an individual case sensitivity evaluation by the Authorized Officer.
- **Modification:** None
- **Justification:** The protection of the special scenic, natural, recreational, and cultural values and activities inherent in the designated sites.

#### **S-NSO-T&E – No Surface Occupancy to Protect Threatened or Endangered Species**

- **For the purpose of:** Habitat protection of listed threatened plants, by the USFWS, under the Endangered Species Act and nominated by the New Mexico Energy, Minerals and Natural Resources Department and the Nature Conservancy for special protection and management.
- **Waiver:** If circumstances or relative resource values change or if the lessee demonstrates that the operations can be conducted without causing unacceptable impacts, or in emergency situations or if the disturbance or impacts associated with the proposed activity is of short duration, such as a habitat or range improvement project, and will not result in permanent adverse impacts to the landscape or degrade wildlife habitat, exceptions or waivers will be considered with appropriate mitigation, as determined by the Authorized Officer at the time of permitting.

- **Exception:** None
- **Modification:** None
- **Justification:** The projection of threatened plants.

#### **S-NSO-W – No Surface Occupancy to Protect Wildlife Resources**

- **For the purpose of:** Protection of wildlife habitat and other resources of concern.
- **Waiver:** If circumstances or relative resource values change or if the lessee demonstrates that the operations can be conducted without causing unacceptable impacts, or in emergency situations or if the disturbance or impacts associated with the proposed activity is of short duration, and will not result in permanent adverse impacts to the landscape or degrade wildlife habitat, exceptions or waivers will be considered with appropriate mitigation, as determined by the Authorized Officer at the time of permitting.
- **Exception:** None
- **Modification:** None
- **Justification:** Protection of wildlife habitat and other resources of concern.

#### **S-NSO-V – Protection of Natural Resources**

As described below, all or a portion of the lease contains natural resource values of concern requiring extraordinary protection. No surface occupancy is deemed necessary because standard mitigation measures and Best Management Practices are not adequate to protect these significant, rare and/or fragile resources. It is the intention of the lessor that this lease be developed by directional drilling from or prorationing with adjacent locations.

- **For the purpose of:** Protection of highly sensitive natural resource values from direct and indirect impacts of lease development.
- **Waiver:** If circumstances or relative resource values change or if the lessee demonstrates that the operations can be conducted without causing unacceptable impacts, and will not result in permanent adverse impacts to the landscape or degrade resource values, a waiver will be considered with appropriate mitigation, as determined by the Authorized Officer at the time of permitting. Requests for waiver will be addressed on a case-by-case basis and evaluated based on available information regarding the proposed activity or disturbance, possible alternate forms of mitigation and consideration of the site-specific natural resource values.
- **Exception:** No exceptions; see waiver criteria.
- **Modification:** None

#### **S-VRM-II – Protection of Visual Resource Management Class II Areas**

- **For the purpose of:** To minimize contrasts to the characteristic landscape of each area.
- **Waiver:** None
- **Exception:** None
- **Modification:** None
- **Justification:** Stipulating controlled surface use is deemed necessary based on the need to protect visual resources in these areas. The objectives for VRM Class II areas are to manage activities so that the changes in any of the basic visual elements (form, line, color, and texture) are not evident in the landscape. A contrast may be seen but should not attract attention.

- **Stipulation:** To meet the VRM objectives described below, and upon determinations made by the BLM Authorized Officer, new disturbance will be minimized as follows:
  1. Painting of facilities in accordance with Notice to Lessees NM-87-1 “Painting of Oil Field Facilities” shall be required to meet VRM objectives.
  2. Proposed disturbances may be moved distances greater than 200 meters to meet VRM Class II objectives.
  3. Low-profile facilities may be required to reduce visual impacts.
  4. Visual simulations will be required as part of the surface use plan for lease operations in sensitive view sheds such as Class II areas along scenic highways, trails, and back country byways.

#### **Specialized Surface Occupancy Requirements for Northern Aplomado Falcon Potential Habitat**

- **For the purpose of:** Protecting grassland habitat and associated special status species of wildlife through improved planning for future oil and gas development on a unit.
- **Requirement:** In areas of potential northern Aplomado Falcon habitat that are open to leasing with a unitization requirement, new lessees form exploratory units prior to commencing drilling activity. This protection measure would allow the BLM to manage the surface in an orderly way and control the rate of reservoir development. The BLM has the authority to approve Unit Agreements, establish the rate of exploration and development, approve the tract allocation formula, and terminate units that cease production (or where production was never established). A simple definition of unitization is the operation of multiple leases as a single lease under a single operator. Unitization results in reduced surface disturbance because wells would be drilled in the most favorable locations without regard for spacing, and the operator and the BLM would establish corridors for access roads and pipelines, eliminating the need for redundant facilities. Lessee benefits include that individual leases could be extended beyond their primary term without actual production, as long as there is production on the unit.

#### ***Withdrawals From Mineral Entry***

Table I-2 displays locations that have been withdrawn from location or entry under the mining laws. Additional lands that have been withdrawn are not included in the table because the resources these withdrawals protect have been made proprietary information by statute or regulation.

**Table I-2: Withdrawals from Mineral Entry**

Serial Number	Withdrawn	Geographic Name	Location (NMPM)	Type of Withdrawal	Segregation	Acres
NMNM095102	10/19/1999	Datil Well Campground	T. 2 S., R. 10 W., sec 10, sec 11.	Recreational Purpose	Locatable Minerals, All Surface	680
NMNM0038148	8/5/1960	Middle Rio Grande Project	T. 3 S., R. 1 E., sec 31, lot 50; T. 4 S., R. 1 E., sec 5, Eastern Most 1/5 POR L28; lots 26, 27, 33, 36, 37; sec 8, lot 54; sec 17, lot 19; sec 21, lots 12-14, 17, 18; sec 28, lots 18, 21; sec 33 lots 13,14.	Reclamation	Locatable Minerals, All Surface	97.645
NMNM0013651	7/8/1955	White Sands Missile Range	T. 6 S., R. 7 E., Sec 6, lot 5 that portion south and west of ROW of US HWY380; T. 6 S., R. 8 E., Sec 18, that portion south and west of ROW of US HWY 380; Sec 20, that portion south and west of ROW of US HWY 380, Sec 28, that portion south and west of ROW of US HWY 380.	Department of Army	All Minerals, All Surface	310
NMNM095103	1/29/1999	Ladron Mountain ACEC	T. 2 N., R. 2 W., Sec 2 lots 1-8, S½N½, N½S½; Sec 32, lots 1-4, W½SW¼; T. 3 N., R. 2 W., Sec 16, Sec 32, Sec 36, T. 2 N., R. 3 W.,	BLM Special Designation	Locatable Minerals, All Surface	4,556.60

Serial Number	Withdrawn	Geographic Name	Location (NMPM)	Type of Withdrawal	Segregation	Acres
			Sec 2, lot 4, S $\frac{1}{2}$ N $\frac{1}{2}$ , S $\frac{1}{2}$ ; T. 2 N., R. 3 W., Sec 36, SE $\frac{1}{4}$ SW $\frac{1}{4}$ , NW $\frac{1}{2}$ SW $\frac{1}{4}$ ; T. 3 N., R. 3 W., Sec 36, N $\frac{1}{2}$ , SW $\frac{1}{4}$ , NE $\frac{1}{4}$ SE $\frac{1}{4}$ , W $\frac{1}{2}$ SE $\frac{1}{4}$ .			
NMNM095104	3/25/1999		T. 5 S., R. 3 W., Sec 16, lots 5-8, N $\frac{1}{2}$ , N $\frac{1}{2}$ SW $\frac{1}{4}$ ; Sec 21, Sec 28, Sec 29, Sec 32; T. 6 S., R. 3 W., Sec 4, lots 3,4, SW $\frac{1}{4}$ , Sec 9, W $\frac{1}{2}$ , Sec 15, W $\frac{1}{2}$ , Sec 16, Sec 22, E $\frac{1}{2}$ , N $\frac{1}{2}$ NW $\frac{1}{4}$ , SE $\frac{1}{4}$ NW $\frac{1}{4}$ , E $\frac{1}{2}$ SW $\frac{1}{4}$ ; T. 5 S., R. 4 W., Sec 25, E $\frac{1}{2}$ .	BLM Special Designation	Locatable Minerals, All Surface	5,607.52
NMNM095118	10/9/2001	Sawtooth ACEC	T. 1 N., R. 11 W., Sec 6, lot 7, SE $\frac{1}{4}$ SW $\frac{1}{4}$ , SW $\frac{1}{4}$ SE $\frac{1}{4}$ .	BLM Miscellaneous	Locatable Minerals, All Surface	116.12
NMNM08384	6/1/1995	The Box	T. 3 S., R. 1 W., Sec 31, lot 18.	BLM Miscellaneous	EXC Minerals, All Surface	39.95



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## APPENDIX J: OHV AREAS AND ROUTE DESIGNATIONS

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In 1972, the President issued Executive Order 11644 requiring each Federal agency to designate “areas and trails” for off-road vehicle use or restriction and to develop regulations implementing this executive order. BLM regulations (43 Code of Federal Regulations [CFR] 8340) established management areas as open, limited, or closed to off-road vehicle use.

Off-highway vehicle (OHV) designations are determined through a comprehensive land use planning process, which serves as an adaptive and flexible approach to the management of all activities on public lands. As circumstances and conditions have changed over the past several decades, the BLM has made a concerted effort to focus the agency’s resources in the development of land use plans by seeking additional funding and staff to address issues associated with the increased population growth near the public lands. OHV designations are a major component of all future planning efforts.

In addition, guidance in BLM Handbook H-1601, Appendix C directs BLM offices to delineate travel management areas, designate OHV management areas and include route designations, “where practical.” The Handbook further states, “If it is not practical to define or delineate the travel management network during the land use planning process, a preliminary network must be identified and a process established to select a final travel management network.”

This Resource Management Plan (RMP) includes revised OHV area designations and route designations within 12 of the 13 wilderness study areas (WSAs) (see *Route Designations* and *Tables J-2 through J-13*). No routes have been identified for the Devil’s Reach WSA under any alternative.

The following appendix provides definitions of OHV area designations and associated terms, a summary of the route inventory and designation process within WSAs, and the alternative route designations.

### DEFINITIONS

Definitions of the BLM’s OHV designations and associated terms are listed below. OHV designations are administrative, allowing management flexibility in response to changes in the environment. All public land is designated as “open,” “limited,” or “closed” to motorized vehicles in each field office’s Resource Management Plan (RMP) or travel and transportation management plan. The following terms are defined as stated in 43 CFR 8340.0-5.

- **Off-Highway Vehicle** – any motorized vehicle capable of, or designed for, travel on or immediately over land, water, or other natural terrain, excluding: (1) any non-amphibious registered motorboat; (2) any military, fire, emergency, or law enforcement vehicle while being used for emergency purposes; (3) any vehicle whose use is expressly authorized by the authorized officer; (4) vehicles in official use; and (5) any combat or combat support vehicle when used in times of national defense emergencies. OHV use is subject to operating regulations and vehicle standards set forth in 43 CFR 8341 and 8342.
- **Open area designation** – any area where all types of vehicle use are permitted at all times, anywhere in the area subject to the operating regulations and vehicle standards set forth in 43 CFR 8341 and 8342. Open designations generally include areas where there are no compelling resource protection needs, use conflicts, or public safety issues that would warrant limiting OHV use.
- **Closed area designation** – an area where the use of OHVs and mechanized vehicles (mountain bikes, wagons, wheeled-game carts) is prohibited. Closures may be necessary to protect resources, ensure visitor safety, or reduce use conflicts. Use of OHVs in closed areas may be

allowed for certain reasons; however, such use shall be made only with the approval of the Authorized Officer. Closed (no rehab) designations are routes that remain usable for travel by foot, horse, or authorized vehicles. Vehicle uses that may be authorized by the BLM include grandfathered uses, valid existing rights, agency administrative use, or emergency use.

- **Limited area designation** – an area restricted at certain times in certain areas, and/or to certain vehicular use. These restrictions may be of any type, but can generally be accommodated within the following categories: number of vehicles, types of vehicles, time or season of vehicle use, permitted or licensed use only, use on existing roads and trails, use on designated roads and trails, and other restrictions. Limitations may be used to meet specific resource management objectives, protect resources, or public safety.
- **Cross-country travel** – wheeled, motorized travel by any vehicle (recreational or other), off of roads and trails. It is difficult to provide one definition of motorized wheeled cross-country travel and have that definition fit all the situations that might occur. Roads and trails appear differently to individuals because of the variety of terrain, vegetation, and soil type found in the Planning Area.

Motorized travel is considered cross-country when:

- The passage of motorized vehicles depresses undisturbed ground and crushes vegetation.
- The motorized vehicle maximum width (the distance from the outside of the left tire to the outside of the right tire or maximum tire width for motorcycles) does not easily fit the road or trail profile. However, an All-Terrain Vehicle (ATV) traveling within a two-track route established by a pickup truck is not considered cross-country travel.
- Motorized vehicles use livestock and game trails, unless the trails are clearly evident, or continuous single-track routes used by motorcycles over a period of years, unless the trail are clearly evident.

Motorized travel is not considered cross-country when:

- Motorized vehicles use constructed roads that are maintained by the oil and gas industry and/or the BLM, unless specifically closed to use through signing and/or gates. Constructed roads are often characterized by a road prism with cut and fill slopes.
- Motorized vehicles use trails specifically designated for the vehicle being used, unless the trail are clearly evident.
- Motorized vehicles use clearly evident two-track and single-track routes with regular use and continuous passage of motorized vehicles over a period of years. A route is a track where perennial vegetation is devoid or scarce, or where wheel tracks are continuous depressions in the ground, evident to the casual observer, but are vegetated. While unauthorized routes are not part of the inventory, they are described as post-WSA routes on Table J-2.

The entire route must meet the above specifications. Newly created routes should be easily identified as not meeting the specifications because many portions would not show signs of regular and continuous passage of motorized vehicles and many areas would still be fully vegetated with no wheel depressions. This definition does have some ambiguity that will continue to exist until formal designation of routes, trails, and areas within the entire Planning Area is completed. This definition only applies to cross-country travel in the dispersed area and not to cross-country travel within special management areas. A special management area may have its own management plan that defines regulations for cross-country travel within its boundaries.

## **ROUTE DESIGNATION AND CLOSURE CRITERIA**

### ***Route Designation Criteria***

The following criteria apply to route designations within WSAs in the Socorro Field Office, to the extent specified by law. Designation of routes within WSAs must be in compliance with the Interim Policy and Management Guidelines for Lands Under Wilderness Review (1995).

Designation criteria are listed in 43 CFR 8342.1, a, b, c and d as follows:

- (a) Areas and trails shall be located to minimize damage to soil, watershed, vegetation, air or other resources of the public lands, and to prevent impairment of wilderness suitability.
- (b) Areas and trails shall be located to minimize harassment of wildlife or significant disruption of wildlife habitats. Special attention will be given to protect endangered or threatened species and their habitats.
- (c) Areas and trails shall be located to minimize conflicts between off-road vehicle use and other existing or proposed recreational uses of the same or neighboring public lands, and to ensure the compatibility of such uses with existing conditions in populated areas, taking into account noise and other factors.
- (d) Areas and trails shall not be located in officially designated wilderness areas or primitive areas. Areas and trails shall be located in natural areas only if the authorized officer determines that off-road vehicle use in such locations will not adversely affect their natural, esthetic, scenic, or other values for which such areas are established.

Other designation considerations include:

- Routes that provide access to existing rights such as private land.
- Routes that provide known access needs for the maintenance of authorized range improvements (pre-Federal Land Policy and Management Act [FLPMA]) or other authorized administrative activities.
- Routes that provide access for unique recreational experiences and/or commercial activities (primarily outfitting).
- Routes previously closed in the 1989 Socorro RMP.

### ***Route Closure Criteria***

Route closure criteria include the following:

- Routes causing unacceptable resource damage, erosion (i.e.: wash outs, ruts, detours).
- Routes through soils which are easily eroded or highly susceptible to resource damage.
- Multiple or parallel routes in the same area (route proliferation).
- Routes that are naturally re-vegetating and/or no longer receiving motorized use.
- Routes that have a high potential to negatively affect threatened or endangered or sensitive wildlife species or limited and important wildlife habitat.
- Routes that have a high potential to encourage harassment or disruption to wildlife or wild horses.
- Vehicle routes (ways) which did not exist when the area was designated a WSA in 1980 (refer to 2002 Review of 1980 Ways Inventory of WSA in the Socorro Field Office).
- Routes which may adversely affect areas of cultural or religious concern for Native Americans.

- Routes which may adversely affect sites which may be eligible for the National Register of Historic Places.

## WILDERNESS STUDY AREAS ROUTE INVENTORY

Completing OHV route designations within the 13 WSAs (Table J-1) is an important goal in the effort to revise the Socorro Field Office 1989 RMP. The BLM's *Land Use Planning Handbook* H-16011-1 (Appendix C, p 18) directs Field Offices that:

“[at] a minimum, the travel management area designation for wilderness study areas (WSAs) must be limited to ways and trails existing at the time the area became a WSA...Existing roads, ways and trails must be fully documented and mapped...In addition, future designations may be made for a WSA if it is released from study.”

Without formal OHV route designations through the land use planning process, the Socorro Field Office would be unable to effectively carry out or enforce motorized OHV regulation and policy within its WSAs.

**Table J-1: Socorro Field Office Wilderness Study Areas**

Antelope	Mesita Blanca
Continental Divide	Presilla
Devil's Backbone	Sierra de Las Cañas
Devil's Reach	Sierra Ladrones
Eagle Peak	Stallion
Horse Mountain	Veranito
Jornada del Muerto	

The Socorro Field Office completed “Vehicular Routes [Ways]” inventories for its 13 WSAs in 1980. Completing a formal designation of vehicle routes in the Socorro Field Office WSAs for this RMP required a baseline inventory of those routes (also referred to as “ways”) that existed at the time of inventory (1980) and/or prior to the enactment of FLPMA (October 21, 1976). While the 1980 inventory is generally a good representation of what existed on the ground at the time, the maps pre-date current mapping technology and standards. In some cases, the 1980 “Vehicular Route” maps are inaccurate. For example, some of the legal descriptions (in text) of “Vehicle Access Routes” do not correspond to mapped “Vehicular Routes.” In other instances, routes mapped in the 1980 inventory appear misplaced and/or drawn incorrectly.

To facilitate the goal of route-by-route OHV designations in the WSAs, and to improve the integrity of the baseline data used in the planning process, this review was undertaken to integrate the old WSA route inventory into the geographic information system (GIS). The following discussion outlines the interpretive process and methodology used to make necessary changes and/or corrections in the 1980 inventory.

### **Data Used**

The following sources of information were reviewed during the route inventory. Much of these data has been verified on the ground with global positioning system (GPS) technology. Although incomplete, these data are the best attempt (to date) at a comprehensive Field Office inventory of routes that are suitable for the gamut of motorized vehicle use. A large percentage of the access routes within the 13 WSAs have been accurately recorded using the GPS over the past 5 to 10 years.

- 1) “Vehicular Routes” Maps, Intensive Wilderness Inventory Report (IWIR), March 1980: These maps were intended as a complete inventory of existing WSA routes, or Ways (pre-FLPMA). Each map was hand drawn at a scale of ½ inch = 1 mile. The maps are crude, black and white,

and show no features other than township and range, the WSA boundary, and approximate locations of routes. Upon careful inspection, the path and length of some of the routes are incorrectly drawn and located on the map. In a few other instances, mapped routes do not correspond to any kind of verifiable intrusion or disturbance when researched against the historical record.

- 2) “Vehicle Access Routes” Descriptions, IWIR, March, 1980: Each of the mapped routes identified above correspond to written descriptions in the IWIR. These written descriptions include the approximate length of the route along with a legal description. Routes are sometimes described as “two track,” “substantially unnoticeable,” and “jeep trail.” In some cases, these descriptions do not correspond to the location of the mapped route(s).
- 3) Assorted working maps and descriptive text found in the IWIR, March 1980: There are several maps and written inventory included in the 1980 IWIR – maps that describe photo-points, maps that identify intrusions (other than vehicle routes), county highway maps “Initial Wilderness Inventory Recommendations [maps],” photocopied U.S. Geological Survey (USGS), 7.5 Minute Series, and maps found in the Las Cruces District, Final Wilderness Inventory Report, Vol. II.” The text in the Final Wilderness Inventory Report attempted to quantify the amount of vehicular route(s) in each WSA.
- 4) 1976 Aerial Photographs: This 1976 flight covers only the Continental Divide and Horse Peak WSAs. Most of this flight was developed in black and white, and a small portion in color. The scale is poor but the resolution is generally good. Although the coverage is limited, these photos were helpful in both confirming and eliminating some of the routes identified in the 1980 inventory.
- 5) Socorro Field Office Digitized Transportation, Road and Trail Inventory: These data are an ongoing Field Office inventory of both improved and unimproved roads and trails throughout the Socorro Field Office. Transportation system information has been digitized for each 1:250,000 topographic map (7.5 minute).

### ***Data Interpretation and Review***

Using the 12 vehicular routes maps included in the 1980 IWIR as baseline data, all routes were reviewed in an effort to match/confirm their existence with at least one other data set, historical or current. Most of the routes in the 1980 inventory were easily authenticated and are included in the Socorro Field Office GIS Database. Data includes both GPS information as well as routes digitized off USGS 7.5 minute topographic maps.

In a few circumstances where mapped vehicular routes did not correspond to the legal descriptions in vehicle access routes, and where there was reasonable evidence that the intended location of the route was nearby, the route was relocated and digitized.

In other circumstances, mapped vehicle access routes did not clearly correspond to any route(s) that have been mapped or photographed either on or before the 1980 IWIR. Under these circumstances, available spatial data were interpreted to discover nearby routes bearing a meaningful resemblance in shape and length to the IWIR mapped route(s). These routes were also relocated and digitized.

In review of the entire record, current conditions on the ground can and do vary from the 1980 inventory. Some routes have disappeared or re-vegetated (lack of use), and new routes have appeared as a result of unauthorized use, but are not included in this inventory.

Photocopies of all maps, inventory, text, and aerial photographs used in this review can be found in the notebook at the Socorro Field Office of the BLM. Additionally, the OHV Baseline Report, prepared on

August 2003, also describes OHV and WSA information which will be carried forward for use in the Socorro RMP.

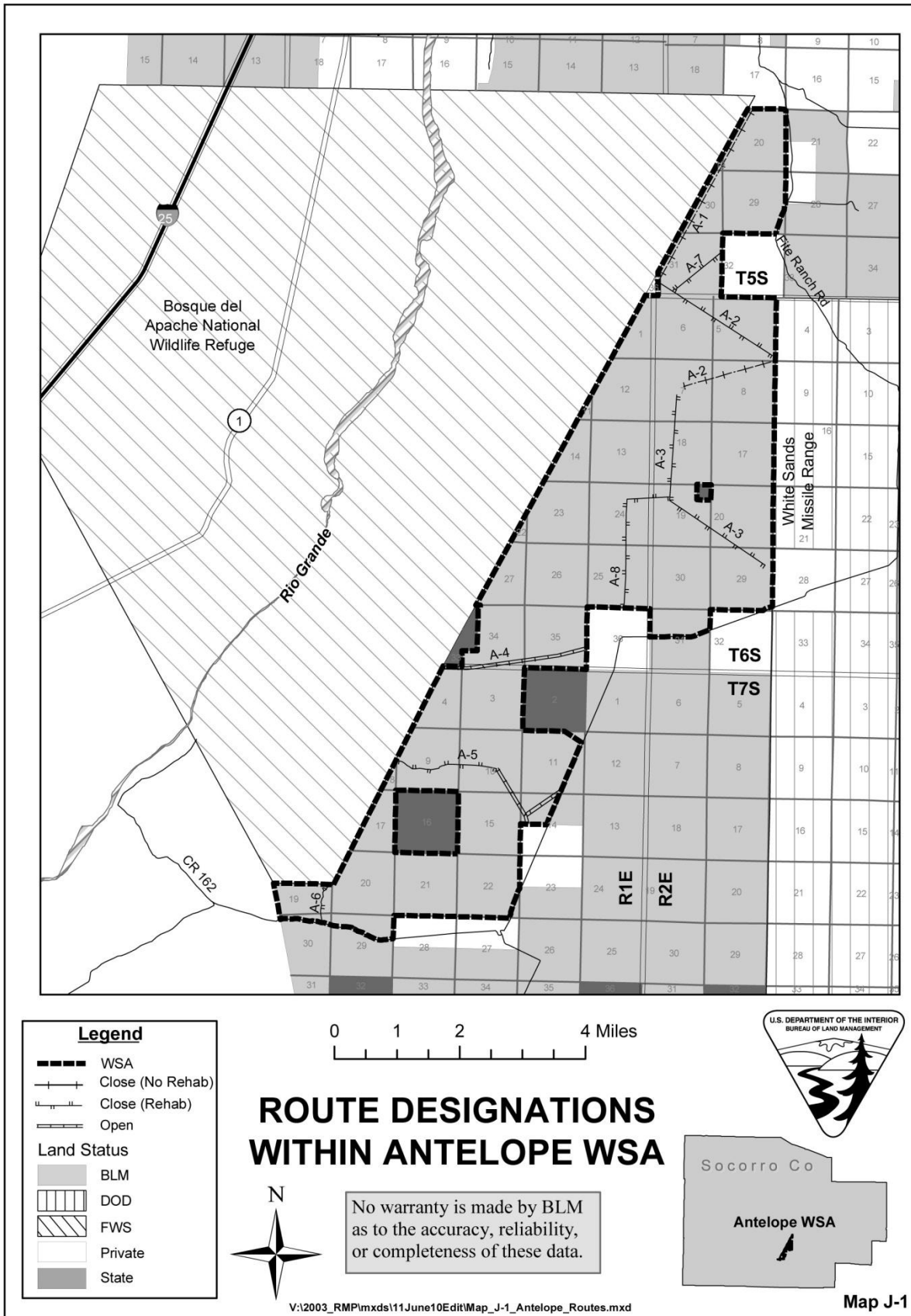
***Wilderness Study Area Route Designations***

In the following table, the length (in miles) and the disposition of each route within the WSAs have been identified. Please note that no routes within the Devil's Reach WSA have been identified.

Table J-2: Route Lengths and Designations

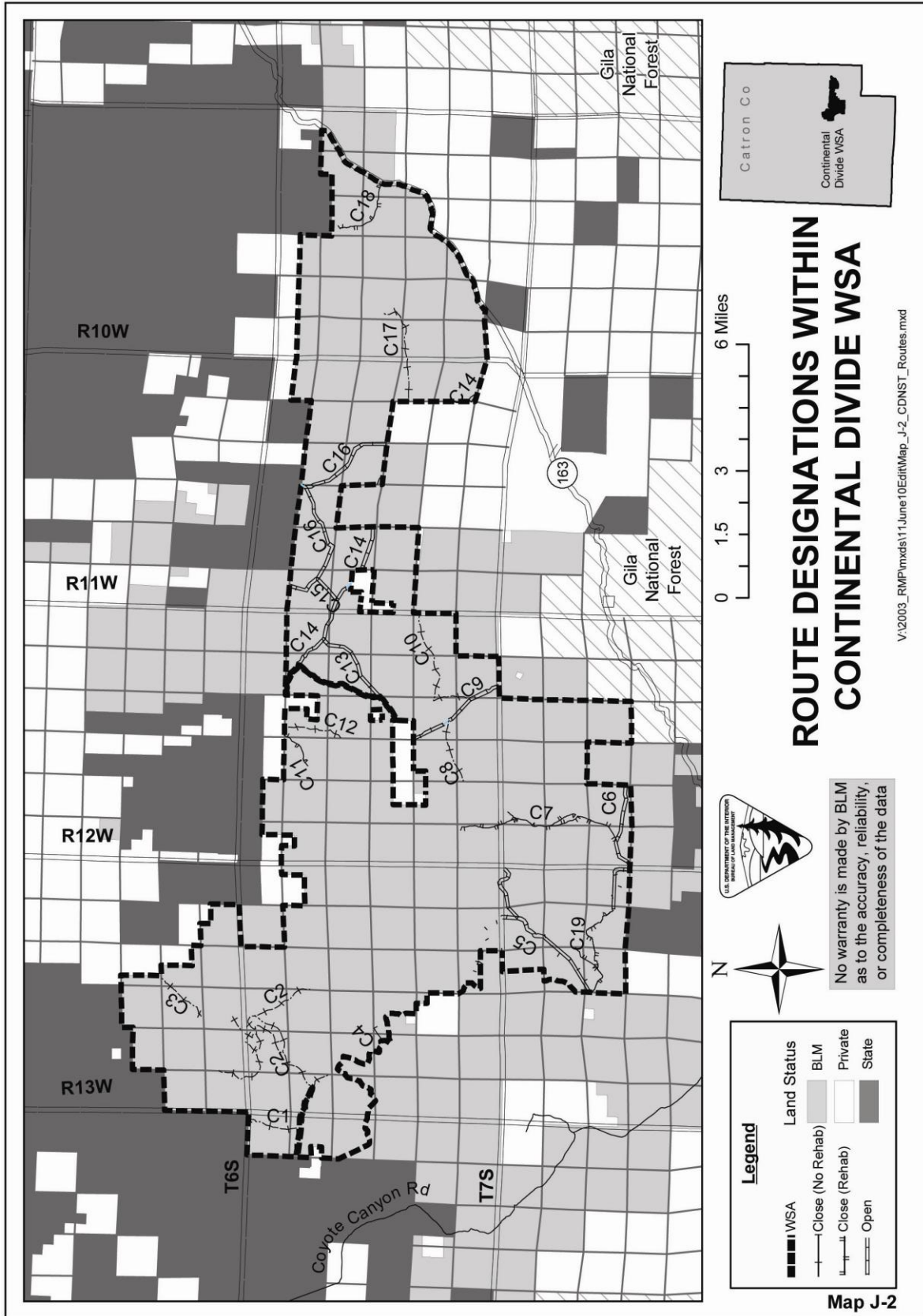
	Antelope		Continental Divide		Devil's Backbone		Eagle Peak		Horse Mountain		Jornada del Muerto		Mesita Blanca		Presilla		Sierra de Las Cañas		Sierra Ladrones		Stallion		Veranito	
	Route	Miles	Route	Miles	Route	Miles	Route	Miles	Route	Miles	Route	Miles	Route	Miles	Route	Miles	Route	Miles	Route	Miles	Route	Miles	Route	Miles
Open	A4	2.5	C5	5.5			E1	1.0			J1	2.0	M1	2.50					L8	0.3	S1	2.0		
	A5	1.5	C6	2.5			E9	4.5			J2	1.3	M6	1.50					L12	0.3				
			C9	2.0			E10	3.0			J4	2.0							L16	9.0				
			C13	2.0			E12	3.0			J5	3.0							L17	3.5				
			C14	4.5			E13	2.0			J7	1.5							L19	1.0				
			C15	1.5			E14	5.0											L20	1.5				
			C16	5.0			E16	2.5																
	<b>Total</b>	<b>4.0</b>	<b>23.0</b>		<b>0.0</b>		<b>21.0</b>		<b>0.0</b>		<b>9.8</b>		<b>4.0</b>		<b>0.0</b>		<b>0.0</b>		<b>15.5</b>		<b>2.0</b>		<b>0.0</b>	
Closed (Rehabilitate)	A2	2.0	C13	2.0	D2	2.0	E1	2.0	H3	2.0	J6	2.0	M1	1.5	P1	3.0	SC2	0.1	L1	1.0	S2	1.0	V3	2.5
	A3	3.5	C7	4.0	D5	2.0	E2	1.0	H4	4.0	J8	0.5	M2	1.0	P2	2.5	SC3	0.3	L2	0.5	S4	5.0	V4	0.3
	A5	1.5	C11	0.5	D6	1.0	E3	1.0	H5	1.0			M3	1.0	P3	3.0			L3	1.0			V5	0.3
	A6	0.5	C18	1.5			E4	3.5					M4	2.5	P4	2.5			L5	1.0			V6	3.5
	A7	1.0	C19	4.0			E7	1.5											L6	1.0				
	A8	2.0	C4	0.5			E9	1.5											L14	1.5				
							E12	2.0											L15	1.0				
							E16	2.0											L18	1.0				
							E19	2.0											L22	1.0				
<b>Total</b>	<b>10.5</b>		<b>12.5</b>		<b>5.0</b>		<b>16.5</b>		<b>7.0</b>		<b>2.5</b>		<b>6.0</b>		<b>11.0</b>		<b>0.4</b>		<b>9.0</b>		<b>6.0</b>		<b>6.5</b>	
Closed (Authorized Use Only)	A1	3.0	C12	1.5	D1	1.5	E5	3.5	H1	1.0	J2	0.8	M6	3.0			SC1	0.3	L4	0.5	S3	8.0	V1	1.5
	A2	1.5	C1	1.0	D3	1.5	E6	1.5	H2	0.5	J3	2.0							L7	2.5	S5	3.0	V2	0.5
			C2	11.0	D4	0.5	E8	1.0											L9	1.0			V3	0.5
			C3	2.5			E11	2.0											L10	0.5				
			C8	2.0			E15	2.0											L11	0.3				
			C10	3.0			E17	1.0											L12	1.0				
			C17	2.5			E18	2.0											L13	1.0				
																			L15	5.0				
																			L17	1.0				
																			L21	2.5				
<b>Total</b>	<b>4.5</b>		<b>23.5</b>		<b>3.5</b>		<b>13.0</b>		<b>1.5</b>		<b>2.8</b>		<b>3.0</b>		<b>0.0</b>		<b>0.3</b>		<b>15.3</b>		<b>11.0</b>		<b>2.5</b>	
<b>Total Closed</b>	<b>15.0</b>		<b>36.0</b>		<b>8.5</b>		<b>29.5</b>		<b>8.5</b>		<b>5.3</b>		<b>9.0</b>		<b>11.0</b>		<b>0.6</b>		<b>24.3</b>		<b>17.0</b>		<b>9.0</b>	

Note: The routes listed as "Closed (Authorized Use Only)" in the above table are labeled "Close (No Rehab)" in the following maps.

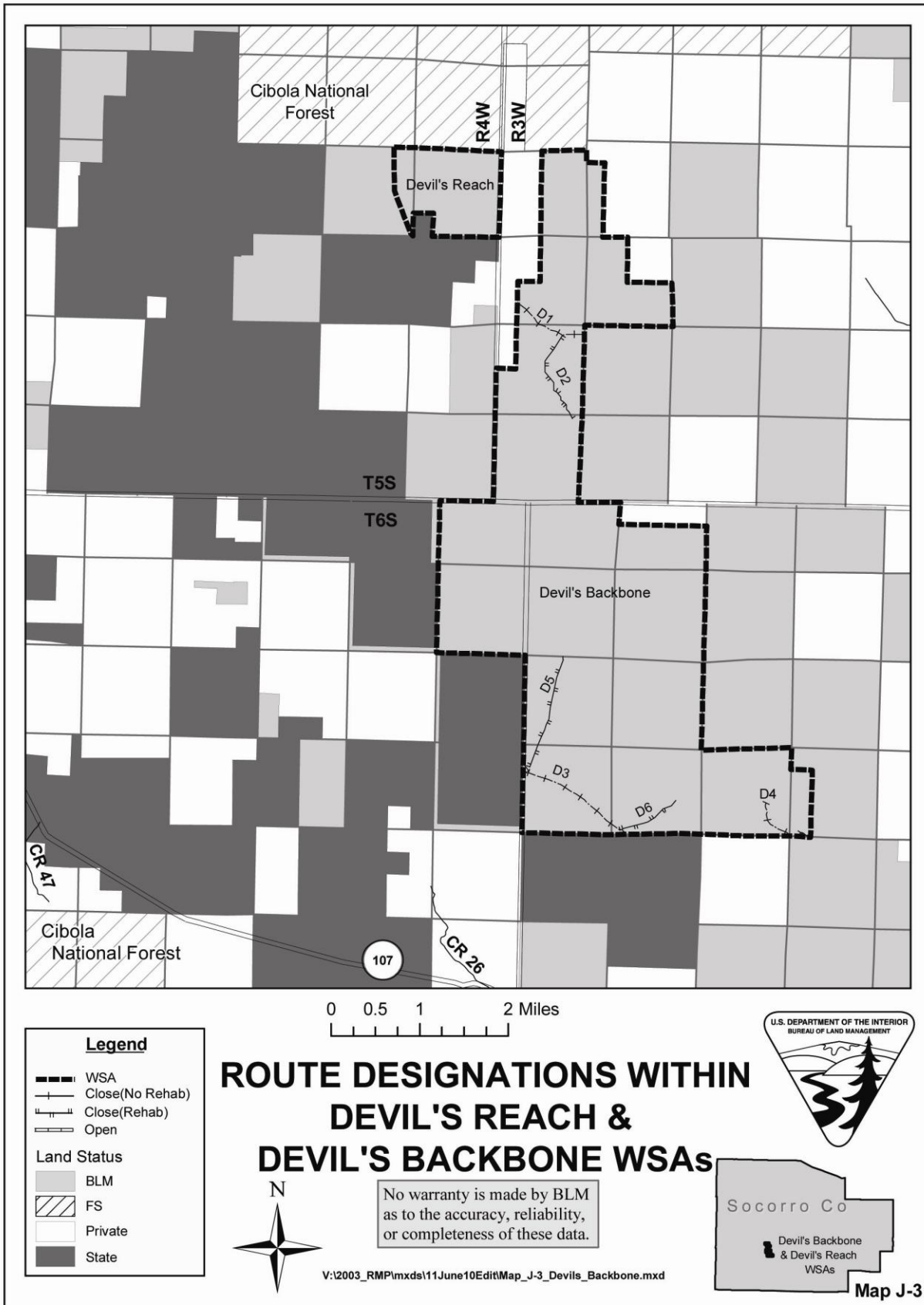




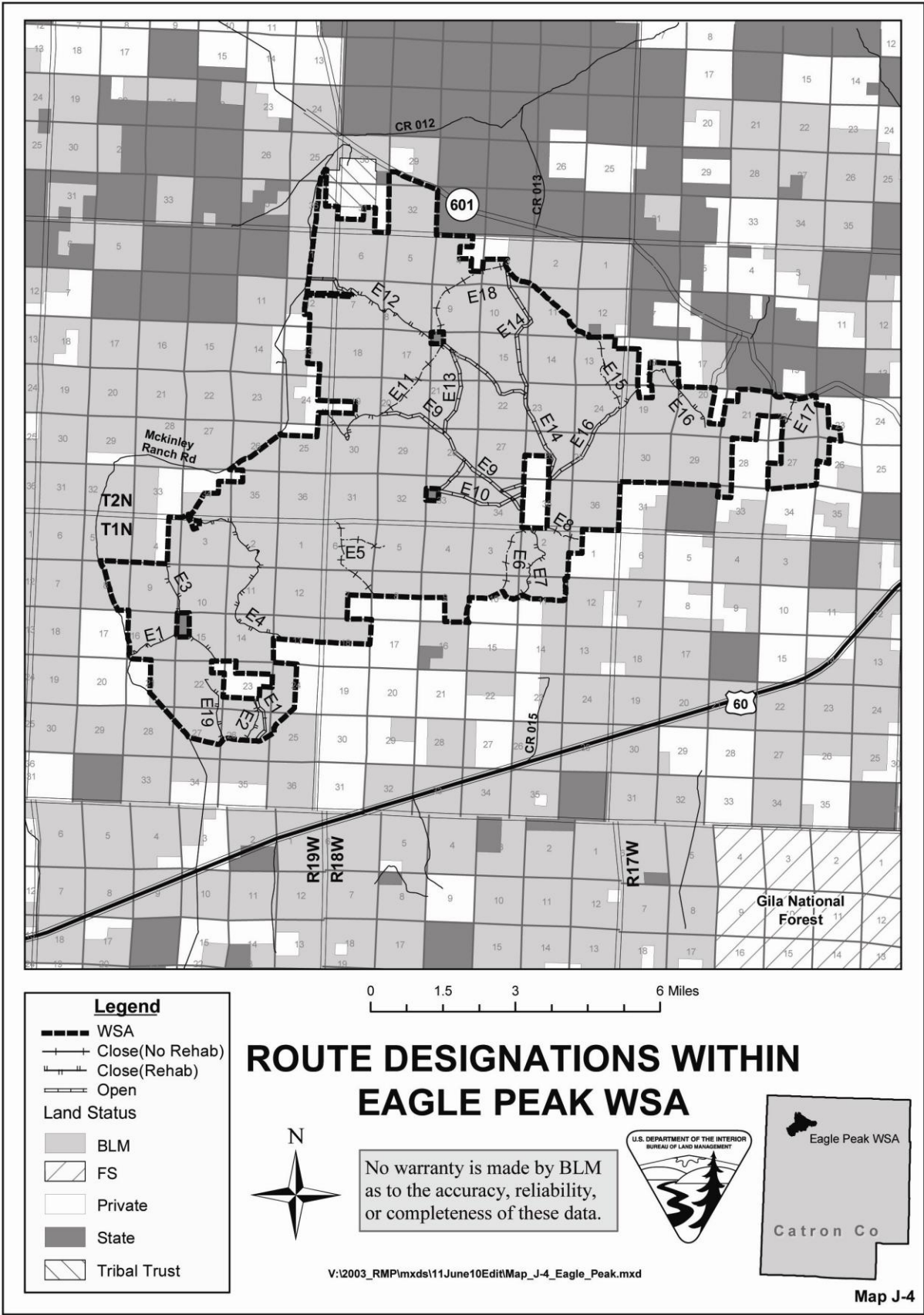
Map J-2



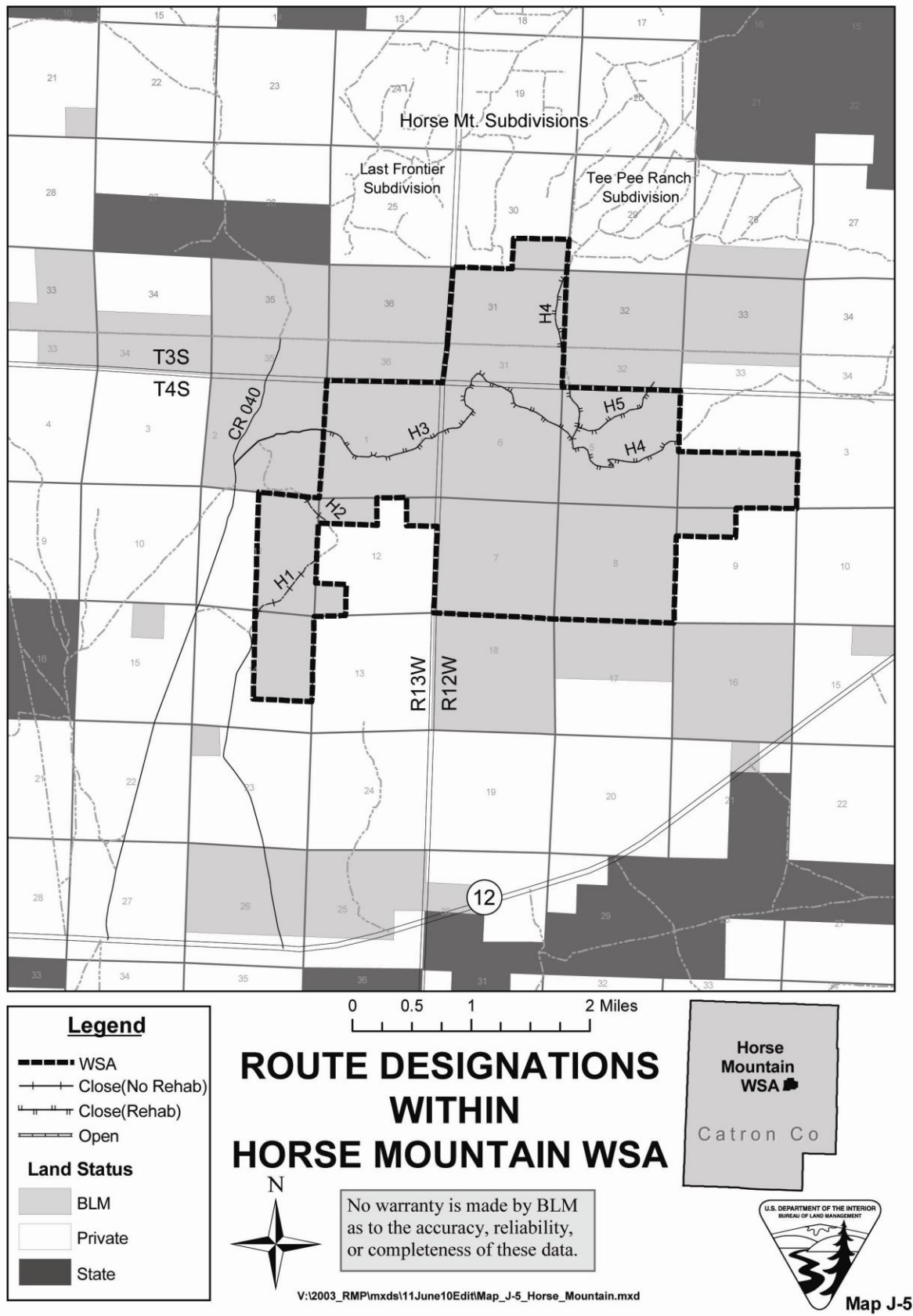
Map J-3



Map J-4

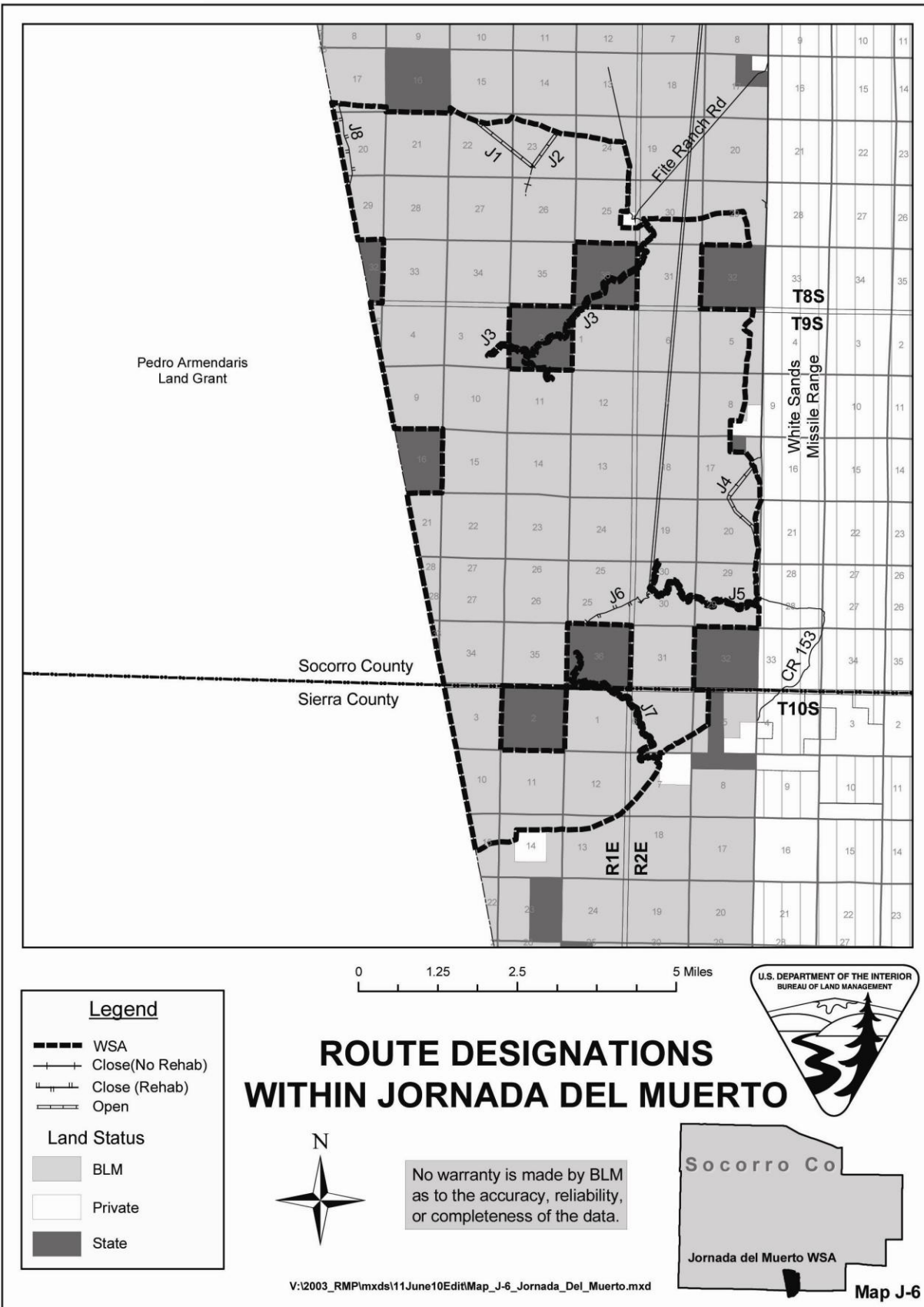


**Map J-5**

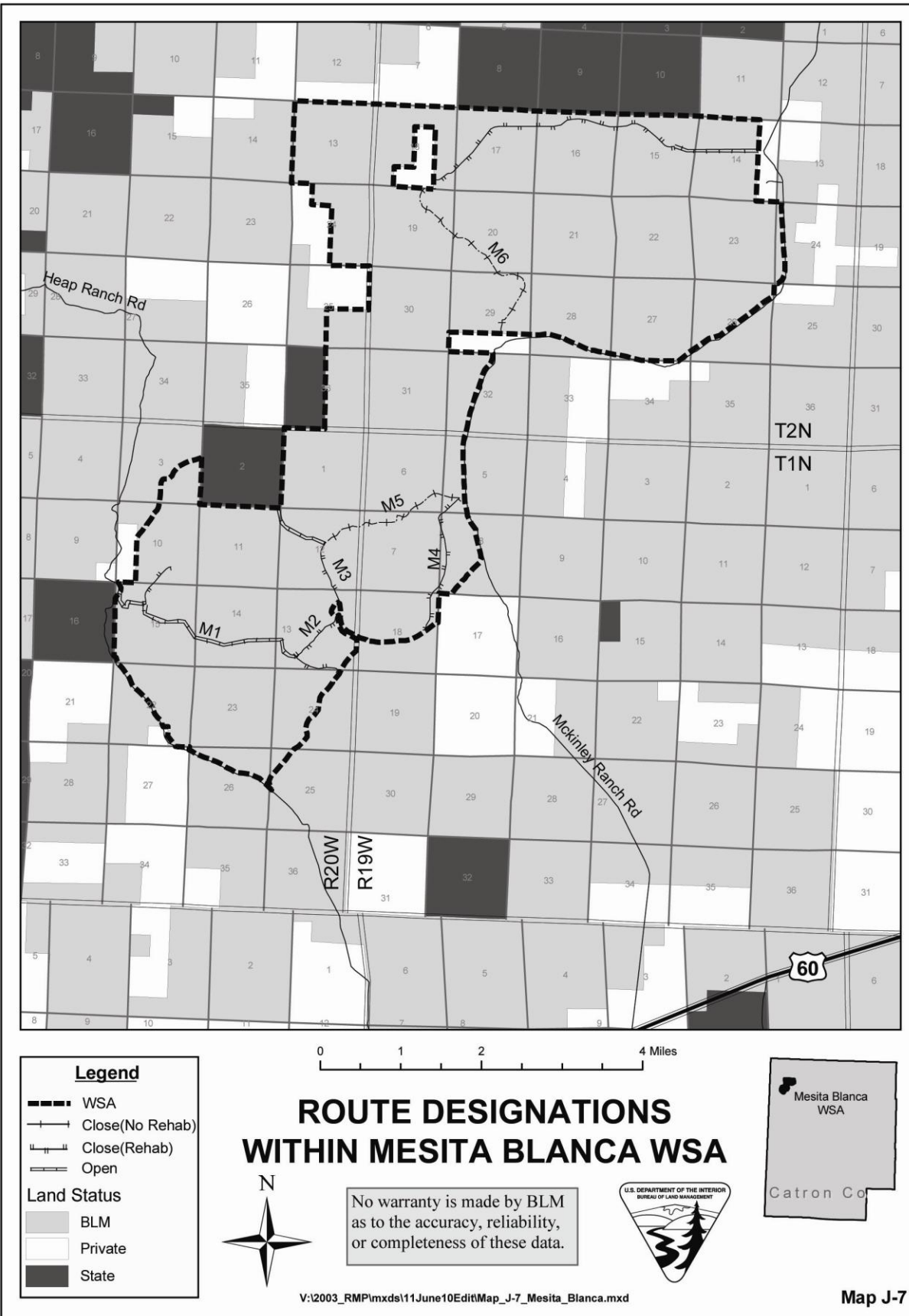




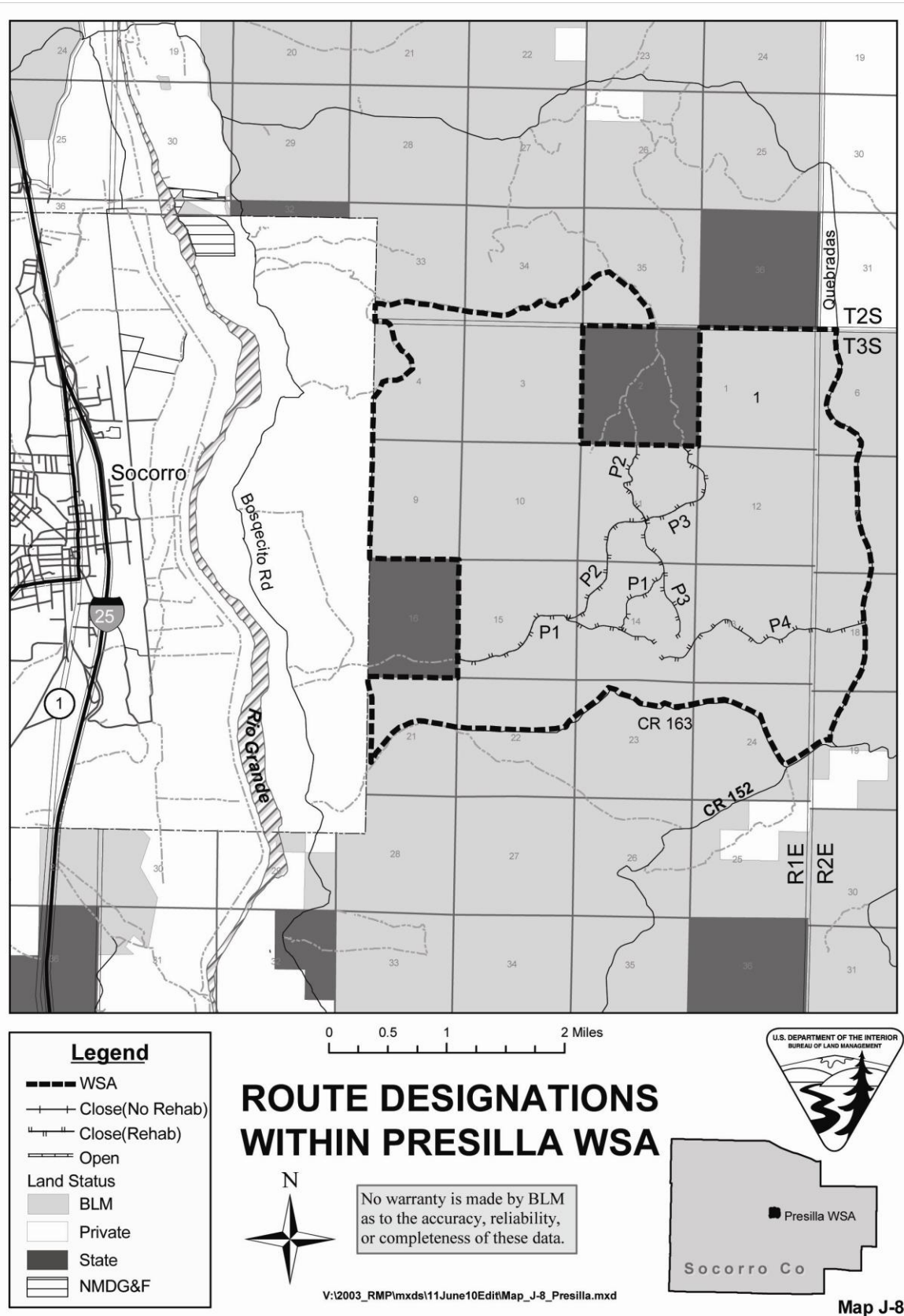
Map J-6



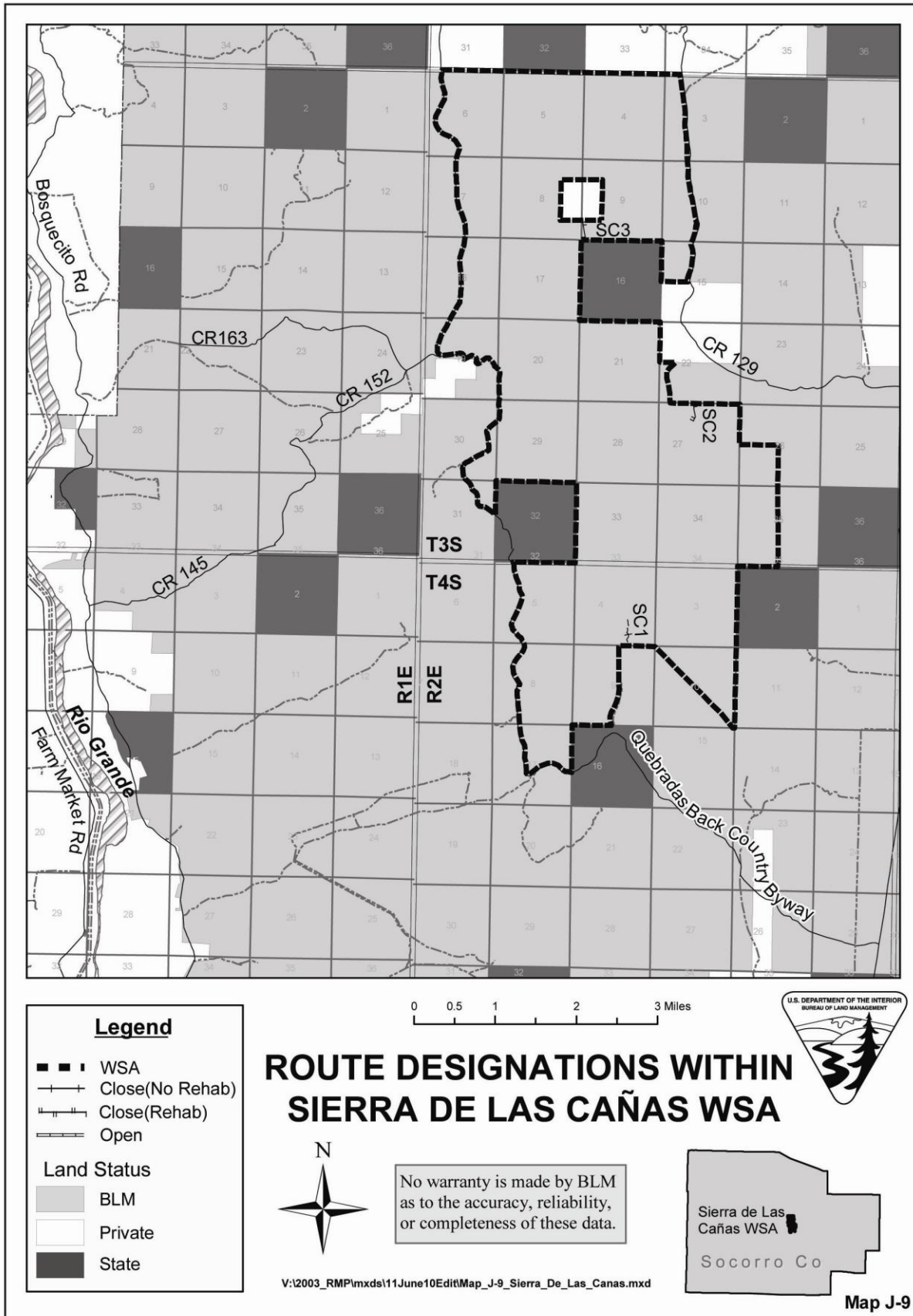
Map J-7



**Map J-8**

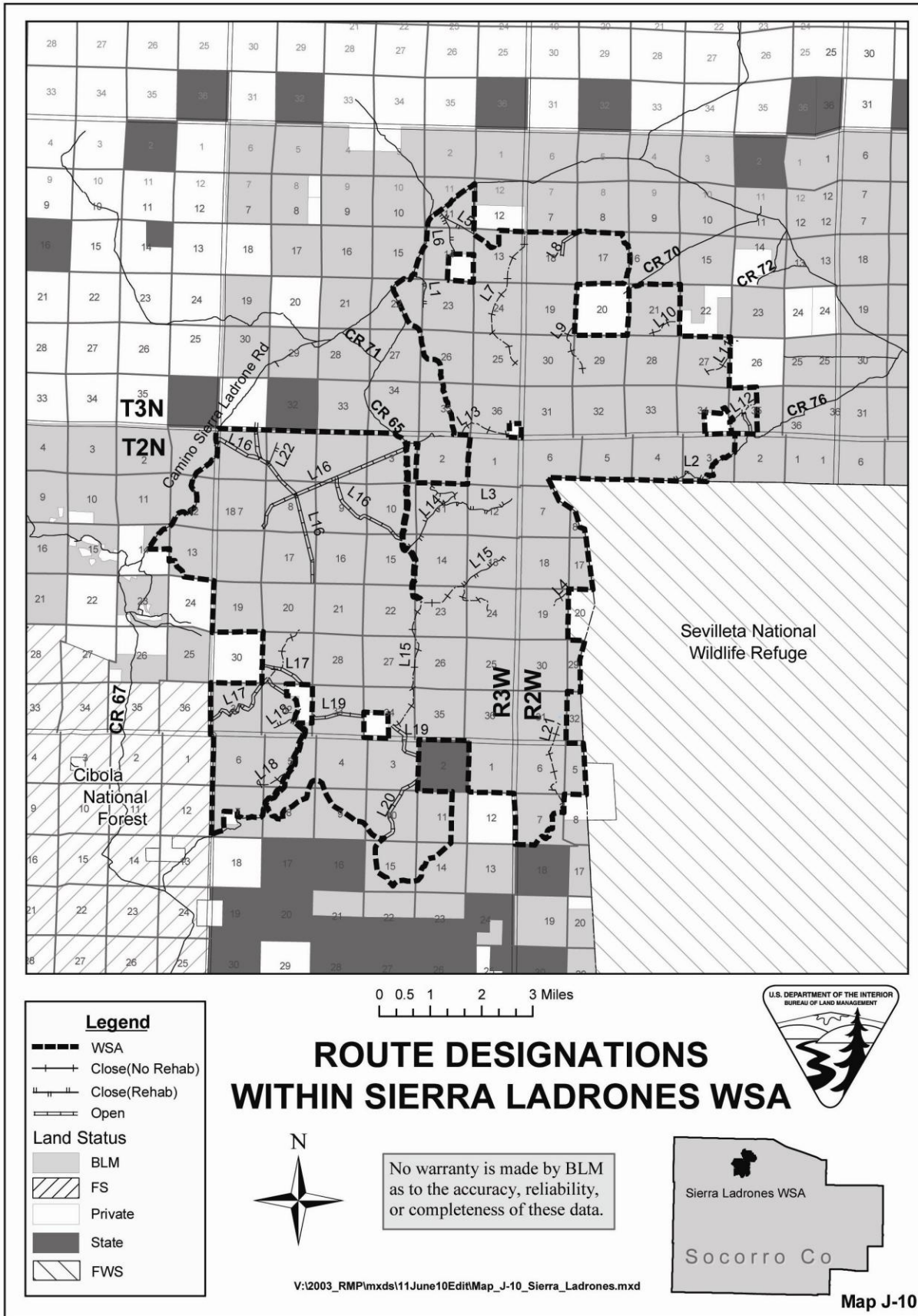


Map J-9

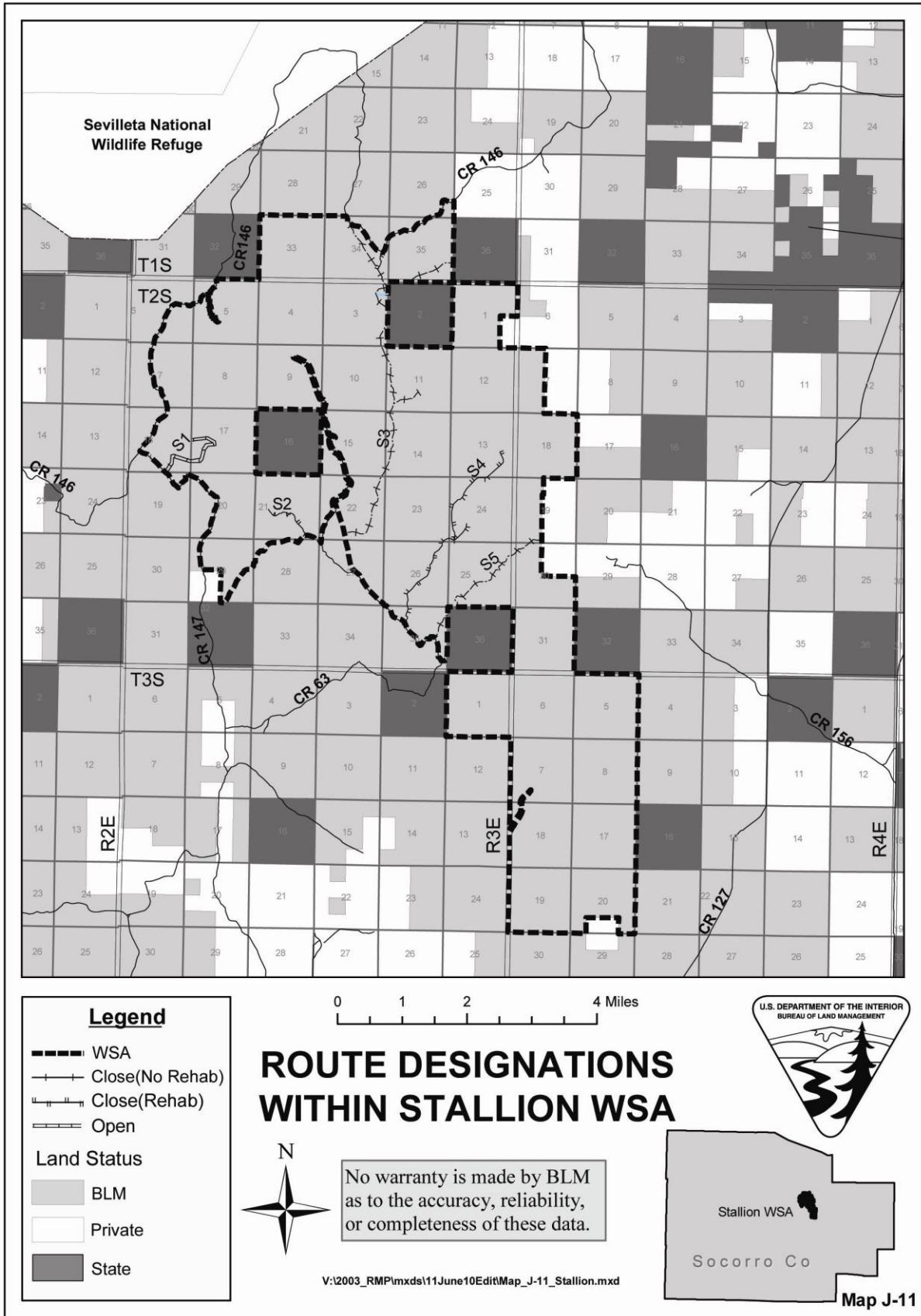




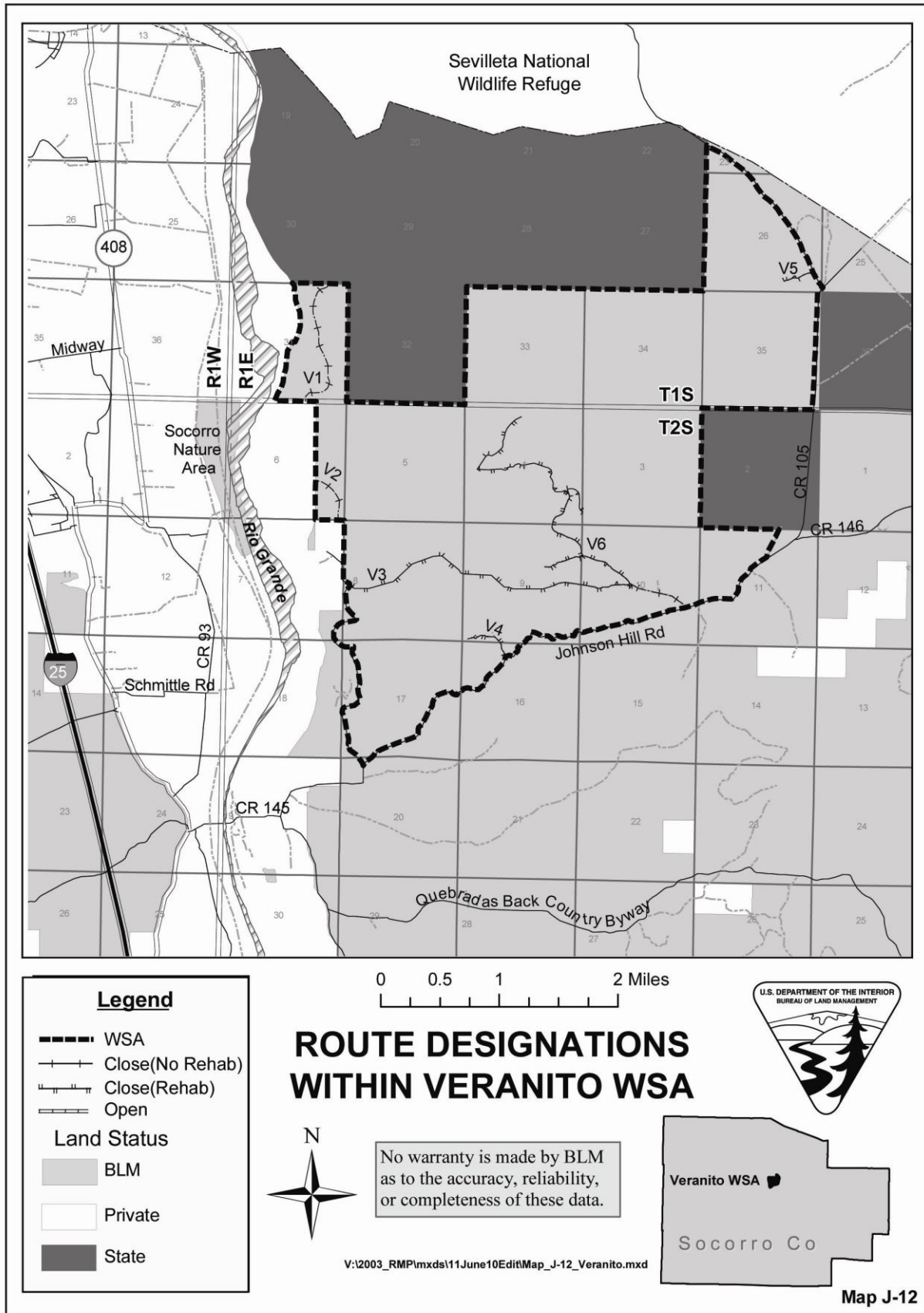
Map J-10



**Map J-11**



Map J-12



## APPENDIX K: SPECIAL DESIGNATIONS AND JUSTIFICATION FOR PROPOSED SPECIAL DESIGNATIONS

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The following appendix contains (1) descriptions of the areas with special designations currently managed by the Socorro Field Office, and (2) a description of the criteria and process for nominations for areas of critical environmental concern (ACECs). Acreages provided for the existing and proposed special designations are based on best available geographical information system (GIS) data and include only Bureau of Land Management (BLM)-managed lands. The acreages do not include State or privately owned inholdings that may be present within these areas.

### AREAS OF CRITICAL ENVIRONMENTAL CONCERN

ACECs are designated by the BLM where special management attention is needed to protect and prevent irreparable damage to important historic, cultural, and scenic values; fish and wildlife resources, or other natural systems or processes; or to protect human life and safety from natural hazards (BLM 2003). The six ACECs located within the Planning Area include Sawtooth, Mockingbird Gap, Ladron Mountain, Agua Fria, Horse Mountain, and Tinajas. These ACECs, except proprietary areas, are shown on Map 4: Special Designations. The boundaries of the Sawtooth ACEC are proprietary due to the sensitivity of the resources being protected. A brief description of each ACEC is provided below.

#### **Sawtooth Proprietary ACEC**

The Sawtooth Proprietary ACEC, located in Catron County northwest of Datil, New Mexico, includes 125 acres of public land. Steep ridges and foot slopes characterize the area. This ACEC provides habitat for a small population of *Erigeron rhizomatous* (Rhizome fleabane or Zuni fleabane). The U.S. Fish and Wildlife Service (USFWS) listed this species as a threatened plant under the Endangered Species Act in 1985. The ACEC provides a refuge for this small population by protecting the area from damage from off-highway vehicle (OHV) use, right-of-way authorizations, mineral entry, or other potentially disturbing activities (BLM 1989).

#### **Mockingbird Gap Proprietary ACEC**

The Mockingbird Gap Proprietary ACEC (previously managed as an SMA) is located on 8,685 acres of public land in Socorro County. The Mockingbird Gap site within the ACEC is listed as a New Mexico State Cultural Property and consists of an extensive complex of Paleoindian campsites including both Clovis and Folsom elements (ca. 10,000 B.C.) (BLM 1989). Paleoindian sites are rare, and this multi-component site provides special opportunities for research in the Southwest (BLM 1989). The ACEC serves to protect cultural resources for future scientific investigation (BLM 1989).

#### **Ladron Mountain ACEC**

The Ladron Mountain ACEC, located in the north-central portion of Socorro County, New Mexico, includes 57,195 acres of public land; several private and State Trust land inholdings are located within the ACEC. The jagged peaks of the Sierra Ladron provide a prominent landmark as they rise from the Rio Grande Valley, from approximately 5,200 feet to an elevation of 9,176 feet. This rough topography, coupled with extreme vegetative diversity, makes the Sierra Ladron critical to the protection of raptor wintering and nesting habitat, and for dwindling mule deer populations (BLM 1989). The Ladron Mountain ACEC contains habitat for rare and endemic, State-listed sensitive plant species including the threadleaf false carrot (*Aletes filifolia*), planks catchfly (*Silene Dlankii*), and Wrights spiderlily (*Tradescantia wriczhtii*) (BLM 1989). The Ladron Mountain ACEC has served as an area for the successful reintroduction of Desert Bighorn Sheep, a New Mexico State endangered species. This ACEC serves to protect habitat for various species of wildlife and plants, as well as geologic, recreational,

paleontological, and scenic values. The Ladron Mountain ACEC overlaps with portions of the Sierra Ladrones WSA.

### **Agua Fria ACEC**

The Agua Fria ACEC, located in Catron County west of Quemado, New Mexico, includes 9,571 acres of public land. State Trust land and private inholdings also are present in the ACEC. Elevation varies from 6,400 feet to 7,600 feet, with the majority of the ACEC characterized by mesas and open grasslands enhanced by volcanic features and vertical cliffs (BLM 1989). The Agua Fria Canyon and associated rimrocks and cliffs provide habitat for a great number of raptor species including bald eagles, golden eagles, peregrine falcons, and prairie falcons (BLM 1989). The ACEC is a long, wide, grass-covered valley bottom bordered with vertical basalt and sandstone cliffs, which provide unique visual resources and recreation opportunities (BLM 1989). In addition to the habitat values, the ACEC contains a large number of archaeological sites (i.e., petroglyphs, campsites, and villages) (BLM 1989). The ACEC serves to protect raptor wintering and nesting habitats, recreational opportunities, and geologic and scenic values. The Agua Fria ACEC overlaps with portions of the Mesita Blanca WSA and Eagle Peak WSA. The area within this ACEC will be incorporated into other designations.

### **Horse Mountain ACEC**

The Horse Mountain ACEC, which is located in Catron County, southwest of Datil, New Mexico, includes 7,490 acres of public land. The majority of the ACEC is characterized as an area of rugged canyons and rough mountainous country with elevations ranging from 7,650 feet to 9,490 feet. The ACEC is relatively remote and rarely grazed, resulting in good habitat conditions for a variety of wildlife species. This ACEC has been identified as providing potential habitat for bald eagles and peregrine falcons (BLM 1989). This ACEC serves to protect wildlife and wildlife habitat, as well as recreational, scenic, and geologic values (BLM 1989). The Horse Mountain ACEC overlaps with portions of the Horse Mountain WSA. The area managed as an ACEC has been reduced.

### **Tinajas ACEC**

The Tinajas ACEC, located east of Socorro, New Mexico, includes 3,463 acres of public land. The ACEC centers on a narrow incised canyon, within which lies the Arroyo del Tajo Pictograph Site. This ACEC serves to protect the pictographs for public interpretation and sociocultural values (BLM 1989). The Tinajas ACEC overlaps with the Presilla WSA. The ACEC designation therefore has been eliminated.

## **BACK COUNTRY BYWAY**

The Quebradas Back Country Byway, designated by the BLM in 1990, is located in Socorro County, New Mexico. The Quebradas National Back Country Byway is a 24-mile drive along scenic colored cliffs, rock formations, and badlands with glimpses of the Rio Grande and surrounding mountains. The Byway can be accessed from Interstate 25 (I-25) and U.S. Highway 380 (US 380). The Byway currently is used most frequently for mountain biking and OHV riding. Surrounding uses include hiking, cultural resources viewing, livestock grazing, and wildlife management areas (e.g., wildlife refuges). The area around the byway will be managed as a Special Recreation Management Area (SRMA).

## **NATIONAL TRAILS**

The Planning Area includes one Congressionally designated National Historic Trail and one National Scenic Trail (i.e., El Camino Real de Tierra Adentro National Historic Trail, and Continental Divide National Scenic Trail, respectively). A brief description of each follows.



### **El Camino Real de Tierra Adentro National Historic Trail**

The El Camino Real de Tierra Adentro National Historic Trail recognizes the primary route between the colonial Spanish capital of Mexico City and the Spanish provincial capitals at San Juan de Los Caballeros (1598-1600), San Gabriel (1600-1609), and then Santa Fe (1610-1821) (BLM 2002). This historic road was in existence for more than 300 years and played a vital role in the settlement of the southwestern United States. The United States Congress and New Mexico State Legislature appropriated funds for the construction of an International Heritage Center to commemorate this historic road (BLM and New Mexico State Monuments Division 2001). This trail is shown on Map 3-11.

### **Continental Divide National Scenic Trail**

The Continental Divide National Scenic Trail climbs and descends the peaks of the Rocky Mountains from Canada to Mexico, traversing mountainside meadows, granite peaks, and high desert saddles. As the trail winds through New Mexico, it crosses arid desert, rugged forested mountains, canyonlands, and lava flows. Two segments of this trail are located within Catron County, but only one is located primarily on public land. These segments of the trail are shown on Map 3-11. The southernmost segment is located primarily within the Pelona Mountain SMA and Continental Divide WSA, which overlap substantially. Within the Pelona Mountain SMA, the BLM developed about 34 miles of primitive trail, between 1990 and 1991 (Carson 2003). The area around the trail will be managed as an SMA.

## **WILD AND SCENIC RIVERS**

The public land within the Planning Area does not contain any river segments listed or suitable for inclusion in the National Wild and Scenic River System.

## **WILDERNESS**

Wilderness located within the Cibola National Forest includes the Withington and Apache Kid Wilderness Areas. Wilderness located within the Gila National Forest includes the Blue Range, Gila, and Aldo Leopold Wilderness Areas. Designated wilderness located within the Bosque del Apache National Wildlife Refuge includes the Indian Wells, Chupadera, and Little San Pascual Wilderness Areas. There are currently no designated BLM wilderness areas within the Planning Area.

## **WILDERNESS STUDY AREAS**

The 13 WSAs located on public land within the Planning Area include Antelope, Continental Divide, Devil's Backbone, Devil's Reach, Eagle Peak, Horse Mountain, Jornada del Muerto, Mesita Blanca, Presilla, Sierra De Las Cañas, Sierra Ladrones, Stallion, and Veranito. These WSAs are shown on Map 3-7, Wilderness Study Areas. When the BLM acquires lands within a WSA, that land is managed as part of the WSA. Six of the 13 WSAs partially overlap with other specially designated areas.

## **SPECIAL MANAGEMENT AREAS**

SMAs are areas that have been identified by the BLM for the management of a specific resource or resources. Twenty-one SMAs are located within the Planning Area. Fifteen of these SMAs are shown in Chapter 3; the boundaries of six SMAs – Iron Mine Ridge, Taylor Canyon, Newton Site, Playa Pueblos, Mogollon Pueblo, and San Pedro – are proprietary due to the sensitivity of the resources being protected. A brief description of each SMA is provided below.

### **San Pedro Proprietary SMA**

The San Pedro Proprietary SMA, located in Socorro County east of San Antonio, New Mexico, includes 1,201 acres of public land. Low ridges, slopes, arroyos, and watercourses characterize the area. This SMA is habitat to *Amsonia fugatei* (BLM 1989), a species listed as a New Mexico Rare Plant by the New

Mexico Rare Plant Technical Council (2003). This species of *Amsonia*, native to the southwestern United States and northwestern Mexico, consists of a few, generally small, isolated populations (BLM 1989). Protection of this isolated population is important because “no two populations are precisely alike and classification is a problem when comparing phenotypic variation within and between populations” (McLaughlin 1985, as referenced in BLM 1989).

### **Soaptree SMA**

The Soaptree SMA is located approximately 27 miles southeast of San Antonio, New Mexico. The SMA includes 1,296 acres of public land just north of the Jornada del Muerto WSA. The area was designated as an SMA because of the large amounts of yucca, which provide aesthetic and recreational values for wildlife viewing, sightseeing, and hiking (BLM 1989).

### **Harvey Plot SMA**

The Harvey Plot SMA is located on 8 acres of public land northeast of Bingham, New Mexico. The area was established as a study plot to provide information to determine the effect of rodents on native vegetation as well as study the ecology of range for rainfall and soil types (BLM 1989). This SMA serves to provide vegetative use data for future scientific use (BLM 1989). This designation has been eliminated because it no longer requires special management.

### **Stallion SMA**

The Stallion SMA, located about 8 miles east of Socorro, New Mexico, includes 19,702 acres of public land. Private and State Trust land inholdings occur in the SMA. The western part of the SMA encompasses the Sierra de las Cañas and Presilla WSAs. The SMA is varied in landscape with a rugged desert mountain range characterized by sheer rock escarpments, deep narrow canyons, ridges, mesa tops, broken badlands, rolling piñon-juniper, and grass covered hills (BLM 1989). Resources within the SMA include multiple vegetative communities for range and forestry, wildlife, cultural, mineral, and recreational resources (BLM 1989). This SMA serves to protect a critical watershed area through erosion control and the minimization of surface-disturbing activities. The Stallion SMA overlaps with portions of the Sierra de las Cañas WSA. The area managed as an SMA has been reduced.

### **Puertecito SMA**

The Puertecito SMA is located about 40 miles northwest of Socorro, New Mexico. The SMA includes 7,153 acres of public land, which does not include inholdings. The central portion of the SMA consists of deep alluvial flats, fans, and low hills. There is a series of low basalt dikes running north to northwest through this lowland area, while the Rio Salado drains eastward through the southern part of the SMA (BLM 1989). This SMA serves to protect a critical watershed area through erosion control and the minimization of surface-disturbing activities.

### **Fence Lake SMA**

The Fence Lake SMA is located about 20 miles northwest of Quemado, New Mexico. The SMA includes 25,453 acres of public land, which does not include the private and State Trust land inholdings present. There are three major landforms: the nearly level mesa tops, steep sandstone and shale escarpments and hills, and gently sloping alluvial fans and drainage ways. The soils and topography in the area’s watershed are subject to headcutting, soil piping, and sheet erosion, resulting in numerous continuous and discontinuous gullies (BLM 1989). Resources found within the SMA include wildlife, range, forestry, cultural, and minerals (a small portion of the SMA lies within the maximum coal-potential area) (BLM 1989). This SMA serves to protect a critical watershed area through erosion control and the minimization of surface-disturbing activities. This area has been incorporated into the Zuni Salt Lake ACEC.

### **Pelona Mountain SMA**

The Pelona Mountain SMA is located about 29 miles southwest of Datil, New Mexico on 70,838 acres of public land. The SMA overlaps with the western portion of the Continental Divide WSA, which is characterized by rugged canyons and rough, hilly-to-mountainous country. The SMA has been identified as providing potential habitat for bald eagles, peregrine falcons, black-footed ferrets, and many other species of wildlife including a large number of big-game species (BLM 1989). Bat Cave, a highly significant archaeological site on the National Register, is located within the Pelona Mountain SMA (BLM 1989). The Pelona Mountain SMA serves to protect elk, deer, and raptor wintering and nesting habitats; geologic, scenic, and recreational values; and the Bat Cave cultural site (BLM 1989). It overlaps with portions of the Continental Divide WSA. The area under special management has been designated as an ACEC.

### **Iron Mine Ridge Proprietary SMA**

The Iron Mine Ridge Proprietary SMA, located northeast of Bingham, New Mexico, includes 1,386 acres of public land. The SMA serves to protect several species of rare and endemic plants that occur in the area, including Wright's spiderlily (*Tradescantia Wrightii*), desert parsley (*Pseudocymoterus longiradiatus*), threadleaf false carrot (*Aletes filifolius*), and other State-listed sensitive species (BLM 1989). This designation has been dropped due to downlisting of the special status plant species.

### **Taylor Canyon Proprietary SMA**

The Taylor Canyon Proprietary SMA, located east of Bingham, New Mexico, includes 384 acres of public land. The SMA serves to protect several species of rare and endemic plants that occur in the area, including threadleaf horsebrush (*Tetradymia filifolia*), gypsum blazing star (*Mentzelia perrenis*), and other State-listed sensitive species (BLM 1989). This designation has been dropped due to downlisting of the special status plant species.

### **Fort Craig SMA**

The Fort Craig SMA, located south of San Marcial, New Mexico, occupies 149 acres of public land. Fort Craig was founded in 1854 as one of the first and largest military strongholds in the Territory of New Mexico (BLM 1989). The Fort Craig SMA serves to protect cultural resource values, public interpretation and recreational opportunities, and potential future scientific use (BLM 1989).

### **Teypama SMA**

The Teypama SMA is located on 37 acres of public land south of Socorro, New Mexico. The Teypama Piro pueblo ruin, which is located in the SMA, is a late-prehistoric and early-historic habitation site of the Piro Indians, who occupied the central Rio Grande Valley at the time of Spanish contact (BLM 1989). Though the SMA has experienced damage in the past from vandals, the area serves to protect cultural resources and opportunities for public interpretation and future scientific investigation (BLM 1989). The area under special management has been reduced and renamed as the Penjeacu SMA.

### **Newton Site Proprietary SMA**

The Newton Site Proprietary SMA is located on 37 acres of public land within Catron County. The SMA consists of a 150- to 200-room pueblo, a large, double-walled kiva or plaza, and associated outlying room blocks (BLM 1989). Though the site has been previously disturbed, the SMA serves to protect cultural resources and opportunities for public interpretation and future scientific investigation (BLM 1989). This SMA has been expanded.

### **Playa Pueblos Proprietary SMA**

The Playa Pueblos Proprietary SMA is located on 203 acres of public land in Socorro County. The SMA consists of two major prehistoric pueblo ruins probably associated with the Tompiro prehistoric culture



area (BLM 1989). One of the pueblos has been vandalized in the past, but the other is virtually intact (BLM 1989). Though the site has been previously disturbed in the past, the SMA serves to protect cultural resources and opportunities for public interpretation and future scientific investigation (BLM 1989).

#### **Rio Salado SMA**

The Rio Salado SMA, located approximately 8 miles west of Ladron Mountain, includes 5,946 acres of public land. The Rio Salado SMA includes many known archaeological sites representative of developmental and early puebloan occupation along the middle Rio Salado drainage (BLM 1989). In addition to these cultural resource values, the SMA serves to protect an unusual plant community and two limestone cave formations (BLM 1989). The Rio Salado SMA overlaps with portions of the Sierra Ladrones WSA. The area within this SMA has been incorporated into another ACEC.

#### **Town of Riley SMA**

The Town of Riley SMA is located on the Rio Salado, north of Magdalena, New Mexico. This SMA includes 533 acres of public land. The SMA surrounds a ghost town originally known as Santa Rita, which was a town settled in the 1880s by Spanish-American homesteaders from Socorro and other villages along the Rio Grande (BLM 1989). This SMA serves to protect historical properties important to the “Followers of Santa Rita” (BLM 1989). This designation has been eliminated in order to evaluate whether there is a need for special management in this area.

#### **Mogollon Pueblo Proprietary SMA**

The Mogollon Pueblo Proprietary SMA, located northwest of Quemado, includes 640 acres of public land. This SMA includes one of the southernmost Chacoa Great House communities. The site, which was occupied from about A.D. 1000 to A.D. 1150, includes a number of large room blocks with internal kivas, a great kiva, and numerous associated middens and petroglyph panels (Duff 2002). Vandals have damaged the site and the SMA was designated to protect the ruins and petroglyphs for scientific investigation and possible public interpretation in the future (BLM 1989). The area within this SMA has been incorporated into the Cerro Pomo ACEC.

#### **Zuni Salt Lake SMA**

The Zuni Salt Lake SMA is located northwest of Quemado, New Mexico. The SMA includes 4,839 acres of public land. The SMA is a location of traditional religious significance to the Zuni Tribe and to other Native American groups in the Southwest (BLM 1989). The lake itself lies in a volcanic crater and contains highly saline water, which has been used since prehistoric times. This SMA serves to protect sociocultural values and cultural resources (BLM 1989). The Zuni Salt Lake SMA overlaps with portions of the Eagle Peak WSA. The area under special management has been expanded and designated as an ACEC.

#### **Cerro Pomo SMA**

The Cerro Pomo SMA is located west of Quemado, New Mexico, entirely within the Eagle Peak WSA. The SMA includes 8,784 acres of public land and contains significant cultural values. Diverse wildlife, vegetation, and landforms occur within the SMA (BLM 1989). The SMA serves to protect cultural and geologic resources, while providing and improving wildlife habitat and recreational opportunities. The area under special management has been expanded and designated as an ACEC.

#### **Walnut Canyon SMA**

The Walnut Canyon SMA is located about 12 miles south of Socorro, New Mexico. The SMA includes 1,145 acres of public land, which does not include the State Trust Land inholdings present. The SMA is characterized by a rugged canyon and associated rough foothill country. The landscape is rugged and

exhibits the diversity of color, vegetation, relief, shape, and geology characteristic of desert foothill mountain communities dissected with long, deep, and wide-arroyo-type canyons (BLM 1989). The diverse vegetation and terrain provide habitat for a variety of big game species and other wildlife including golden eagles, prairie falcons, and great horned owls (BLM 1989). The SMA serves to protect raptor wintering and nesting habitat and geologic, recreational, and scenic values (BLM 1989). This designation has been eliminated since it was determined to not require special management.

### **The Box SMA**

The Box SMA is located about 6 miles southwest of Socorro, New Mexico, and includes 300 acres. Local rock climbers use the area on a regular basis, and climbers from other states and countries also often visit the SMA (BLM 1989). The SMA provides recreational opportunities, while serving to protect scenic quality in the area (BLM 1989). About 40 acres of this SMA have been withdrawn from entry for locatable minerals (Bell 2003). The area under special management has been expanded and designated as an SRMA.

### **San Lorenzo Canyon SMA**

The San Lorenzo Canyon SMA is located about 10 miles northwest of Socorro, New Mexico. It includes 2,320 acres of public land. The SMA is characterized by the presence of a rugged, scenic canyon bordering the Sevilleta National Wildlife Refuge. Due to its proximity to Socorro, it offers excellent day use opportunities (BLM 1989). The SMA provides recreational opportunities, while serving to protect wildlife habitat, cultural resources, and scenic values (BLM 1989). This area has been incorporated into other designations.

### **Datil Well Campground SMA**

BLM manages the Datil Well Campground SMA to provide camping opportunities in a roaded natural setting and to provide interpretative and educational opportunities. Consistent with a 1989 RMP decision, BLM developed the *Datil Well Campground Recreation Management Plan* in 1992. The management actions implemented in the SMA include limiting motor vehicle use to existing roads and trails, restricting the area from right-of-way authorizations and leases, and prohibiting surface occupancy for fluid mineral leasing. In addition, BLM has withdrawn 640 acres of the SMA from entry for locatable minerals and prohibits woodcutting in the area, fulfilling 1989 RMP decisions. This area will now be managed as an SRMA.

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## APPENDIX L: WILDLIFE AND SPECIAL STATUS SPECIES

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This appendix includes supplementary information on (1) best management practices (BMPs) and management parameters that apply to the wildlife habitat management program, (2) Aplomado Falcon management guidelines, (3) additional information on federally listed special status species, (4) a table of Federal- and State-listed species in the Planning Area (Table L-1 on page L-12), and (5) a table of noxious weeds that may be found in the Planning Area (Table L-2 on page L-17).

### HABITAT ENHANCEMENT PROJECTS AND GENERAL BEST MANAGEMENT PRACTICES

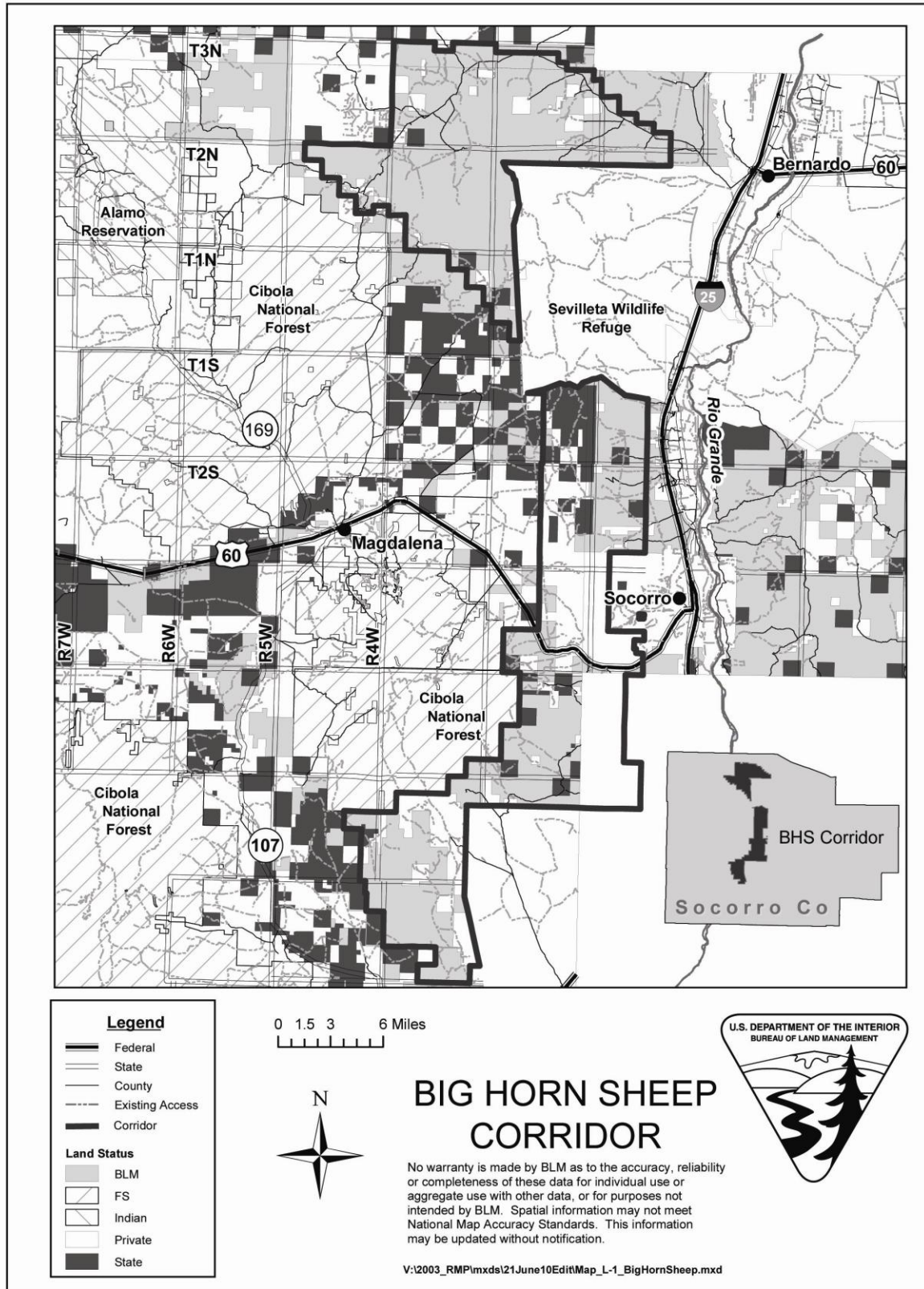
Habitat enhancement projects will be implemented at the landscape level. The following management parameters and associated BMPs will be utilized as needed to protect and enhance wildlife habitat:

- Upland habitats, including grasslands, shrub steppe, forest, and woodlands, will be managed so that the forage, water, cover, structure, and security necessary for wildlife are available on public land. Vegetative communities will be managed for the desired plant community based on the ecological site. Management will be accomplished by enhancing, restoring, and maintaining wildlife habitat by reducing the amount of woody vegetation encroachment.
- Restore, maintain, or improve riparian vegetation, habitat diversity, and associated watershed function to achieve healthy and productive riparian areas and wetlands. Management will be accomplished by enhancing, restoring, and maintaining, riparian areas which have been degraded through the invasion of non-native vegetation, such as Tamarisk and Russian olive.
- Manage livestock forage production to support wildlife population levels identified by the New Mexico Department of Game and Fish (NMDGF).
- In addition to continuing management guidance, develop and apply appropriate BMPs, fluid mineral stipulations, and/or mitigation measures, as determined through the environmental analysis process, for renewable energy development, fluid mineral development, and other surface-disturbing activities within the Socorro Field Office resource area for the protection of wildlife resources within ACECs, SMAs, and habitat management plan(HMP)/cooperative resource management plan management areas, and other crucial habitat areas identified through inventory, survey, and study. Areas may include habitat for special status species, nesting areas, raptor nests; prairie dog towns; and Desert Bighorn Sheep, mule deer, pronghorn antelope, and elk birthing areas.
- Apply seasonal use restrictions within crucial habitat areas or habitat for special status species, which may include high-use raptor areas, prairie dog towns, Desert Bighorn Sheep, mule deer, pronghorn antelope, elk birthing areas, and other crucial habitat areas identified through inventory, survey, and study.
- To protect Desert Bighorn Sheep, domestic sheep, and goats will be excluded within occupied and historic habitat areas and the delineated Desert Bighorn Sheep corridor/management area will be managed to enhance habitat conditions (Map L-1).
- Limit human and wildlife interactions within crucial habitat areas identified through inventory, survey, and study.
- The Bureau of Land Management (BLM) should take actions that further progress towards conditions indicating attainment of the Standards for Public Land Health and Guidelines for Livestock Grazing Management. Such actions will include management that restores, protects, and enhances the resources necessary to support, as site potential allows, native wildlife species and their associated habitats in their historical proportions (BLM Manual Section 6840).

The following BMPs and/or management parameters will apply to the wildlife habitat management program in the Socorro Planning Area.

- Implement vegetative treatments to restore and enhance wildlife habitat. Treatments may include:
  - prescribed fire
  - mechanical treatment
    - hand crews with chain saws
    - heavy equipment (chaining, mowing, mulching, grubbing, etc.)
  - chemical treatments
- Maintain integrity and safety of existing habitat improvement projects.
  - perform annual or biannual inspection of all projects
  - maintain projects as needed
- Increase availability and distribution of year-round water.
  - develop springs/seeps where as necessary
  - construct artificial watering facilities where needed
- Modify fences or other man-made structures to limit impacts to wildlife.
- Construct/maintain watershed rehabilitation structures for purposes of reducing erosion.
- Continue to inventory, survey, and study wildlife populations for purposes of determining habitat needs and requirements or areas which require special protection and management.
- Limit adverse human/wildlife interactions.
  - limiting vehicle access into certain areas
  - road closures and obliterations implement seasonal use restrictions into areas of resource concern
- Construct protective exclosures/fences around riparian areas, wildlife watering facilities, and other areas of resource concern.
- Monitor and inventory all habitat improvement projects to ensure that project objectives are being met.
  - global positioning system and incorporate into geographic information system
  - monitor use and effectiveness
- Implement/authorize predator damage management activities to meet species-specific management goals and objectives.
- Reintroduce, supplement, or translocate native species in suitable habitat.
- Implement environmental education events to meet management goals and objectives.
- Install/maintain signage where necessary to meet management goals and objectives.
- Implement updated Utah Field Office Guidelines for Raptor Protection From Human and Land Disturbance (U.S. Fish and Wildlife Service Utah Field Office).
- Implement wildlife management BMPs that relate to wildlife management (see Appendix C).

Map L-1



Map L-1

## NORTHERN APLOMADO FALCON MANAGEMENT GUIDELINES

The following requirements would apply within the historic range of the northern Aplomado Falcon, in addition to a 15-mile buffer area around it in areas that are determined to be potential habitat. These requirements apply to all surface-disturbing activities. BMPs described for special status species will also apply to the Northern Aplomado Falcon.

### ***Surface Occupancy Requirements for Northern Aplomado Falcon Habitat***

#### Unitization

Outside of the areas that are discretionarily closed to fluid mineral leasing, potential northern Aplomado Falcon habitat will be open to leasing, but fluid mineral leasing stipulation S-CSU-W4 requires new lessees to form exploratory units and to submit a plan of development prior to commencing drilling activity. This special protection measure will allow the BLM to manage the surface in an orderly way, as well as to control the rate of reservoir development. The BLM has the authority to approve Unit Agreements; require specific provisions of Unit Agreements; establish the rate of exploration and development; approve the tract allocation formula; and terminate units that cease production (or where production was never established). The objective is to protect grassland habitat and associated special status species of wildlife through improved planning of future oil and gas development on a unit. A simple definition of unitization is the operation of multiple leases as a single lease under a single operator. A Federal Oil and Gas Unit would result in less surface disturbance. Wells would be drilled in the most favorable locations without regard for spacing. The operator and the BLM would establish corridors for access roads and pipelines, and there would be no need for redundant facilities. There are also lease benefits in that individual leases could be extended beyond their primary term without actual production, as long as there is production on the unit. The Socorro Field Office currently has one existing unit (Cathead Mesa Unit).

#### Grazing Management Actions for the Protection of Aplomado Falcon Nests

This is not a nest site plan. A nest site plan is site specific. This is a list of potential actions that may be undertaken when an Aplomado nest or nest selection activities may be disturbed by livestock grazing and related activities. Other actions may be developed and substituted as we gain understanding of Aplomados and their management.

The objective is to avoid disturbance causing the loss of an Aplomado Falcon nest. Disturbance is defined here as activities of people or livestock that lead to the abandonment or loss of a potential (i.e., nest selection in progress) or existing Aplomado Falcon nest.

1. The BLM will prepare an annual site plan, in cooperation with the grazing allottee, U.S. Fish and Wildlife Service (USFWS), NMDGF, and other cooperators, for each aplomado nest or perhaps nest cluster, pasture, or allotment where nesting is discovered.
2. Depending on the level of or potential for nest disturbance and the specific grazing allotment situation the following measures may be applied with respect to accomplishing the stated objectives with the least disturbance to both the falcons and the grazing allottee.
  - a. Deactivate all livestock facilities (water troughs, supplement sites, etc.) within 2 miles of nest sites to divert cattle use to other areas of a pasture from March (or discovery of nest site) thru fledging (fledging may occur as early as May or as late as early August).

OR

- b. Herd livestock away from the nest area. All herding activities must remain at least 0.25 mile from active nest sites.

OR

- c. Remove grazing from the nest pasture(s) from March (or discovery of nest site) thru fledging (fledging may occur as early as May or as late as early August).
- OR
- d. Remove grazing from the allotment from March (or discovery of nest site) thru fledging (fledging may occur as early as May or as late as early August).
- OR
- e. With US FWS approval, construct a temporary enclosure or drift fence to protect nest. Maintain a distance between  $\frac{1}{4}$  and  $\frac{1}{2}$  mile from nest.
- OR
- f. With USFWS approval, the BLM may place a small cattle barrier to protect the nest tree/yucca (examples: powder river or hog wire panels with t posts; steel L-shaped frames wired together and staked to the ground; a small solar electric fence). Use of these measures has a high likelihood of causing serious disturbance to the nest. Measures would be taken to minimize the impact (minimize time to set up, minimize visual impacts, time during the day to prevent egg cooling, time during female feeding forays, etc).
- OR
- g. Enactment of livestock management measures should be accomplished within 1 week or as soon as possible thereafter.
3. Modify open water storages within 3 to 5 miles of occupied aplomado habitat. Ensure that there is some form of open water left available to birds and bats if large water sources are covered.
    - a. Cover open water storage units with small mesh netting.
    - b. Install floating neoprene covers on open water storages.
    - c. Replace open storages with closed ones.
  4. Install and maintain bird escape ramps on all water troughs on public land.
  5. Reduce human disturbance such as construction, working cattle, road, or range improvement maintenance within 0.25 to 0.50 mile of a nest.
  6. Reduce threat of wildfire impacting nest structure.
    - a. Because allottees are quite often important links in fire suppression and are likely to request help from local volunteer fire departments. The Socorro Field Office fire program should work closely with volunteer fire departments for quick, but appropriate, response to wildfire in nest areas.
      - i. Avoid fire operations, including aircraft use, as much as possible in the immediate nest area.
        1. Keep ground operations at least 0.5 mile from nest site.
        2. Keep air operations above 2,000 feet above ground level within 0.5 mile of nest sites.
    - b. Use fire retardant to create fire breaks and protect nest structures (yuccas) during critical periods.

## BEST MANAGEMENT PRACTICES FOR SPECIAL STATUS SPECIES

### *Tracking the Reasonably Foreseeable Development*

The BLM will closely monitor acres disturbed to ensure the reasonably foreseeable development is an appropriate planning estimate. The number of acres projected to be disturbed directly from activities is 420 acres over the next 15 years. For helium and carbon dioxide resources, the approximate number of acres that are projected to be disturbed from exploration and development activities is 1,000 acres.

### *Preliminary Investigations*

Activities occurring during preliminary investigations may include remote sensing; mapping of rock outcrops and seeps (either of which result in little or no surface disturbance); and seismic, gravity, and magnetic surveys.

A lease is not required to conduct such preliminary investigations. However, the geophysical operator is required to file a completed Form 3150-4, “Notice of Intent to Conduct Oil and Gas Exploration Operations” for all operations on public lands.

In general, the BLM requires an examination of resource values and development of appropriate surface protection and reclamation measures prior to the geophysical contractor beginning surface-disturbing activities associated with preliminary investigations. The BLM will solicit involvement from public land users (e.g., grazing allottees) to develop site-specific protection measures and reclamation specifications. Compliance monitoring should occur during and after seismic exploration activities when or if necessary. Compliance inspections during the operation ensure that requirements and guidelines are being followed. Compliance inspections upon completion of work ensure that the lines are clean and drill holes are plugged properly.

The frequency of authorized seismic exploration will be dependent upon resource conditions and seasonal restrictions (timing limitations) that may be imposed to reduce conflicts with watershed conditions, wildlife, and hunting. Management practices specific to wildlife and vegetation resources include the following:

- Prior to surveying/flagging routes for geophysical surveys or other preliminary activities, the project area shall be surveyed for raptor nests. Surveys will be conducted by professional biologists approved by the Authorized Officer. The Universal Transmercator grid locations of all raptor nests will be reported to the Authorized Officer. All raptor nests will be avoided by the required distances described under the surface disturbing activities section. A raptor nest is defined as any raptor or corvid nest.
- In areas that constitute occupied or potential northern Aplomado Falcon habitat, a protocol survey for this species will be conducted along with the general raptor nest survey described above, prior to surveying/flagging lines.
- During operations at any time, all habitat features (pinnacles, cliffs, ledges, caves, and trees, shrubs, and yuccas greater than six feet in height) containing or capable of containing a raptor nest will be avoided by vehicular traffic or other activities likely to destroy them.
- Time activities to avoid wet periods.
- In areas that allow for off-road travel, minimize the off-road impact of large vehicles. Use wide, flat-tread, balloon tires (especially on seismic thumper trucks) where possible. Use all-terrain vehicles rather than large vehicles where possible.
- Occupied habitat for special status species will be avoided in a manner similar to surface use requirements (avoid occupied habitat up to 0.5 mile) unless impacts are adequately mitigated.



### **Surface-Disturbing Activities**

In siting facilities, the following measures must be followed:

Prior to surveying/flagging locations for pads, routes for roads, and any other preliminary activity, the project area will be surveyed for raptor nests. Surveys will be conducted by professional biologists approved by the Authorized Officer. All raptor nests will be avoided by the distances and seasonal periods listed below.

<b>Species</b>	<b>Minimum Distance</b>	<b>Season</b>
Aplomado Falcon	0.5 mile	January 1-July 31
Eagle	0.5 mile	February 1-July 15
Ferruginous Hawk	0.5 mile	February 1-July 15
Prairie Falcon	0.5 mile	March 1-August 1
All other raptor species	0.5 mile	during observed nest establishment through fledgling
Black-Tailed Prairie Dog	0.25 mile	January 1-June 15
Gunnison Prairie Dog	0.25 mile	February 15-June 15

Long duration land use activities will not be allowed to occur within the species-specific spatial buffer zone of active nests or occupied prairie dog towns listed above. Short duration activities will be avoided within the species-specific spatial buffer zones during the dates listed above. Short duration activities will be limited to the spatial buffer zone outside of the boundary of the occupied prairie dog town and will not occur within the occupied town. All other raptor species nests will be avoided by the spatial buffer zone only during the period listed above, regardless of the duration of the activity. Before land use activities can commence a raptor and prairie dog survey must be completed.

A short duration activity is defined as an activity that would begin outside of a given breeding season and end prior to initiation of a given breeding season. A long duration activity is defined as an activity which would continue into or beyond a given nesting/breeding season. An active nest is defined as any nest that has been occupied in the last seven years. A nest will be determined active or inactive by the Authorized Officer. Surveys will be conducted by professional biologists approved by the Authorized Officer.

- In areas that constitute occupied or potential northern Aplomado Falcon habitat, a protocol survey for this species will be conducted along with the above general raptor nest survey prior to surveying/flagging locations.
- During operations at any time, all habitat features (pinnacles, cliffs, ledges, caves, and trees, shrubs, and yuccas greater than six feet in height) containing or capable of containing a raptor nest will be avoided by vehicular traffic or other activities likely to destroy them.
- In areas that allow for off-road travel, minimize the off-road impact of large vehicles. Use wide, flat-tread, balloon tires (especially on seismic thumper trucks) where possible. Use all-terrain vehicles rather than large vehicles where possible.
- Tree and vegetation clearing will be limited to the minimum area required.
- Construction activities will be timed to avoid wet periods.
- Power lines will be constructed to standards outlined in the most recent version of “Suggested Practices for Raptor Protection on Power Lines” published by the Edison Electric Institute/Raptor Research Foundation, unless otherwise agreed to by the Authorized Officer. The holder is responsible for demonstrating that power pole designs not meeting these standards are raptor safe.

Such proof will be provided by a raptor expert approved by the Authorized Officer. The BLM reserves the right to require modifications or additions to power line structures constructed under this authorization, should they be necessary to ensure the safety of large perching birds. The modifications and/or additions will be made by the holder without liability or expense to the United States.

- Occupied habitat for special status species will be avoided in a manner similar to surface use requirements (avoid occupied habitat up to 0.5 mile) unless impacts adequately mitigated.
- All equipment installed on Federal leases will be constructed to prevent birds and bats from entering them and, to the extent practical, to discourage perching and nesting.
- Open top tanks, reserve pits, disposal pits, or other open pits will be required to be equipped to deter entry by birds, bats, or other wildlife.
- In areas that allow for off-road travel, minimize the off-road impact of large vehicles. Use wide, flat-tread, balloon tires (especially on seismic thumper trucks) where possible. Use all-terrain vehicles rather than large vehicles where possible.
- Time activities to avoid wet periods.

## FEDERALLY LISTED SPECIAL STATUS SPECIES

Table L-1 includes Federal- and State-listed species in the Planning Area. Federally listed special status species are discussed below.

### **Alamosa (springsnail) tryonia** (*Tryonia alamosae*)

*Status:* Federally listed as Endangered, State listed as Threatened *Habitat:* Alamosa spring snail is an aquatic species that occurs in low-velocity water near thermal spring sources.

### **Bald eagle** (*Haliaeetus leucocephalus*)

*Status:* Federally listed as Threatened, State listed as Threatened *Habitat:* Occurs in New Mexico mainly as a migrant and winter resident. Primarily occurs in riparian areas adjacent to major rivers, reservoirs, and ponds. Roosts in large trees that may be close to foraging areas. Other potential foraging habitats include grass flats, rolling uplands, and creosote rolling uplands.

### **Black-footed ferret** (*Mustela nigripes*)

*Status:* Federally listed as Endangered, State Species of Concern *Habitat:* Black-footed ferret occur in mixed shrub habitats. They are associated closely with prairie dog colonies, whose burrows provide retreats for ferrets. The dependency of the black-footed ferret on this prey species is such that reduction in the number of ferrets is directly related to reduction in prairie dog densities.

### **Chiricahua leopard frog**

(*Rana chiricahuensis*) *Status:* Federally listed as Threatened, State Species of Concern *Habitat:* Occurs in cienegas (wetland communities surrounded by arid lands), pools, livestock tanks, lakes, reservoirs, streams, and rivers from 3,200 to 8,900 feet in central and southwestern New Mexico.

### **Gila chub** (*Gila intermedia*)

*Status:* Federally Proposed Endangered, State listed as Endangered *Habitat:* Gila River basin.

**Gila trout** (*Oncorhynchus gilae*)

*Status:* Federally listed as Endangered, State listed as Threatened *Habitat:* Gila trout inhabits small, cool, clear mountain streams with riparian vegetation that provides a fairly complete canopy.

**Least tern** (*Sterna antillarum*)

*Status:* Federally listed as Endangered, State listed as Endangered *Habitat:* Least tern nest on the ground, typically on sites that are sandy and relatively free of vegetation. Such areas include sandbars in river floodplains. In New Mexico and other parts of the southern Great Plains, alkali flats also are potential nesting areas.

**Loach Minnow** (*Tiaroga cobitis*)

*Status:* Federally listed as Threatened, State listed as Threatened *Habitat:* The loach minnow inhabits riffle areas with moderate-to-rapid water velocities and moderate-to-high gradients.

**Mexican gray wolf** (*Canis lupus baileyi*)

*Status:* Federally listed as Endangered, State listed as Endangered *Habitat:* Wolves were once found in shortgrass plains, sacaton grassland, sycamore, cottonwood, rabbitbrush, chapparal, and oak savanna.

**Mexican spotted owl** (*Strix occidentalis lucida*)

*Status:* Federally listed as Threatened, State Species of Concern *Habitat:* Habitat characteristics highly sought by Mexican spotted owls include coniferous forests with high canopy closure, high stand density, a multi-layered canopy, uneven-aged stands, numerous snags, and high amounts of downed woody matter.

**Northern Aplomado Falcon** (*Falco femoralis septentrionalis*)

*Status:* Federally listed as Endangered, State listed as Endangered *Habitat:* Habitat consists of grassy plains interspersed with mesquite, cactus, and yucca.

**Pecos sunflower** (*Helianthus paradoxus*)

*Status:* Federally threatened, State listed as Endangered *Habitat:* A wetland species that grows on wet, alkaline soils at spring seeps, wet meadows, stream courses, and pond margins.

**Piping plover** (*Charadrius mebdus*)

*Status:* Federally listed as Threatened, State listed as Endangered *Habitat:* Piping plover occur on sandflats or along bare shorelines of rivers and lakes.

**Rio Grande Silvery Minnow** (*Hybognathus amarus*)

*Status:* Federally listed as Endangered, State listed as Endangered *Habitat:* Rio Grande silvery minnow occupy a variety of habitats in low-gradient, large streams with shifting sand or silty bottoms.

**Socorro isopod** (*Thermosphaeroma thermophilus*)

*Status:* Federally listed as Endangered, State listed as Endangered *Habitat:* This species exists in extremely limited habitat – thermal spring waters with temperatures ranging from 25 to 33 degrees celcius.

**Socorro (springsnail) pyrg** (*Pyrgulopsis neomexicana*)

*Status:* Federally listed as Endangered, State listed as Endangered *Habitat:* The Socorro pyrg is an aquatic, gilled invertebrate found in springs and brooks, living among aquatic plants, on stones, or in the uppermost layer of an organic muck substratum.

**Southwestern willow flycatcher** (*Empidonax traillii extimus*)

*Status:* Federally listed as Endangered, State listed as Endangered *Habitat:* Breeding sites are associated closely with dense groves of willows, tamarisk, Russian olive, and other riparian woodland vegetation; often associated with a scattered overstory of cottonwood.

**Spikedace** (*Meda fulgidae*)

*Status:* Federally listed as Threatened, State listed as Threatened *Habitat:* The preferred habitat of spikedace varies with season and age class. Young fish typically occupy stream-margin habitats, where the water velocity is low and the depth is less than 3 inches. Adults are most commonly found in main channel areas, where water velocity is higher and with depths of 3 to 8 inches. In winter months, the species tends to congregate along cobble-bottomed stream margins where such habitats are available.

**Zuni fleabane** (*Erigeron rhizomatus*)

*Status:* Federally listed as Threatened, State listed as Endangered *Habitat:* Nearly barren detrital clay hillsides with soils derived from shales of the Chinle or Baca formations (often seleniferous); most often on north- or east-facing slopes in open piñon-juniper woodlands at 7,300 to 8,000 feet.

**Table L-1: Federal And State-Listed Species In Planning Area**

Common Name	Scientific Name	Federal Status	State Status	BLM	County
<b>Plants</b>					
Abajo penstemon	<i>Penstemon lentus</i>		Sensitive		Catron
Arizona sunflower	<i>Helianthus arizonensis</i>	Sensitive	Sensitive		Catron
Cory's joint-fir	<i>Ephedra coryi</i>	Sensitive	Sensitive		Socorro
Davidson's cliff carrot	<i>Pteryxia davidsonii</i>	Sensitive	Sensitive		Catron
Fugate's amsonia	<i>Amsonia fugatei</i>	Sensitive	Sensitive	Sensitive	Socorro
Gila groundsel	<i>Packera quaerens</i>	Sensitive	Sensitive		Catron
Gila thistle	<i>Cirsium gilense</i>	Sensitive	Sensitive		Catron
Gooding's bladderpod	<i>Lesquerella gooddingii</i>	Sensitive	Sensitive		Catron
Heartleaf groundsel	<i>Packera cardamine</i>	Sensitive	Sensitive		Catron
Hess' fleabane	<i>Erigeron hessei</i>	Sensitive	E	Sensitive	Catron
Laguna fame flower	<i>Talinum brachypodium</i>	Sensitive	Sensitive		Socorro
La Jolla prairie clover	<i>Dalea scariosa</i>	Sensitive	Sensitive	Sensitive	Socorro
Mogollon clover	<i>Trifolium longipes</i> ssp. <i>neurophyllum</i>	Sensitive	Sensitive		Catron
Mogollon death camas	<i>Anticlea mogollonensis</i>	Sensitive	Sensitive		Catron
Mogollon dock	<i>Rumex tomentellus</i>	Sensitive	Sensitive		Catron
Mogollon hawkweed	<i>Hieracium fendleri</i> var. <i>mogollense</i>	Sensitive	Sensitive		Catron
Mogollon whitlow grass	<i>Draba mogollonica</i>	Sensitive	Sensitive		Catron, Socorro
Mohave panicum	<i>Panicum mohavense</i>	Sensitive	Sensitive	Sensitive	Socorro
Mount Graham beardtongue	<i>Penstemon deaveri</i>	Sensitive	Sensitive		Catron, Socorro
New Mexico beardtongue	<i>Penstemon neomexicanus</i>		D		Catron

Common Name	Scientific Name	Federal Status	State Status	BLM	County
Nutriso milk-vetch	<i>Astragalus nutriosensis</i>	Sensitive	Sensitive		Catron
Organ Mountains giant hyssop	<i>Agastache pringlei</i> var. <i>verticillata</i>	Sensitive	Rare		Catron
Organ Mountains paintbrush	<i>Castilleja organorum</i>		Rare	Sensitive	Catron, Socorro
Parish's alkali grass	<i>Puccinellia parishii</i>	Sensitive	E	Sensitive	Catron
Pecos sunflower	<i>Helianthus paradoxus</i>	T	E	Sensitive	Socorro
Plank's campion	<i>Silene plankii</i>	Sensitive	Sensitive	Sensitive	Socorro
Porter's globe mallow	<i>Sphaeralcea procera</i>		Rare	Sensitive	Socorro
Rock fleabane	<i>Erigeron scopulinus</i>	Sensitive	Sensitive	Sensitive	Catron, Socorro
Sacramento groundsel	<i>Senecio sacramentanus</i>		Rare		Catron
San Andres rock daisy	<i>Perityle staurophylla</i> var. <i>homoflora</i>	Sensitive	Sensitive		Socorro
San Mateo penstemon	<i>Penstemon pseudoparvus</i>	Sensitive	Sensitive		Socorro
Sand pricklypear	<i>Opuntia arenaria</i>	Sensitive	E	Sensitive	Socorro
Southwest Solomon's seal	<i>Polygonatum cobrense</i>		Sensitive		Catron
Standley's whitlow grass	<i>Draba standleyi</i>	Sensitive	Sensitive	Sensitive	Socorro
Tall bitterweed	<i>Hymenoxys brachyactis</i>	Sensitive	Sensitive		Socorro
Wooton's alumroot	<i>Heuchera wootonii</i>	Sensitive	Sensitive		Catron
Wooton's hawthorn	<i>Crataegus wootoniana</i>	Sensitive	Sensitive		Catron
Wright's campion	<i>Silene wrightii</i>	Sensitive	Sensitive	Sensitive	Catron, Socorro
Wright's globe mallow	<i>Sphaeralcea wrightii</i>		Sensitive	Sensitive	Socorro
Wright's marsh thistle	<i>Cirsium wrightii</i>	Sensitive	Sensitive	Sensitive	Socorro
Zuni fleabane	<i>Erigeron rhizomatus</i>	T	E	Sensitive	Catron
Zuni milk-vetch	<i>Astragalus missouriensis</i> var. <i>accumbens</i>	Sensitive	Sensitive	Sensitive	Catron
<b>WILDLIFE</b>					
<b>Amphibians</b>					
Arizona toad	<i>Bufo microscaphus microscaphus</i>		Sensitive	Sensitive	Catron, Socorro
Chiricahua leopard frog	<i>Rana chiricahuensis</i>	C	Sensitive		Catron, Socorro
Lowland leopard frog	<i>Rana yavapaiensis</i>	Sensitive	Catron		
<b>Birds</b>					
American peregrine falcon	<i>Falco peregrinus anatum</i>		T		Catron, Socorro
Northern Aplomado Falcon	<i>Falco femoralis septentrionalis</i>	E	E		Socorro
Baird's sparrow	<i>Ammodramus bairdii</i>		T	Sensitive	Catron, Socorro
Bald eagle	<i>Haliaeetus leucocephalus</i>	T	T		Catron, Socorro
Bell's vireo	<i>Vireo bellii</i>		T		Catron, Socorro
Black tern	<i>Chlidonias niger surinamensis</i>			Sensitive	Socorro
Brown pelican	<i>Pelecanus occidentalis carolinensis</i>		E		Catron
Burrowing owl	<i>Athene cunicularia hyugaea</i>			Sensitive	Catron, Socorro

Common Name	Scientific Name	Federal Status	State Status	BLM	County
Common black hawk	<i>Buteogallus anthracinus anthracinus</i>		T		Catron, Socorro
Common ground dove	<i>Columbina passerina pallescens</i>		E		Socorro
Ferruginous hawk	<i>Buteo regalis</i>			Sensitive	Catron, Socorro
Gila woodpecker	<i>Melanerpes uropygialis</i>		T		Catron
Gray vireo	<i>Vireo vicinior</i>		T		Catron, Socorro
Interior least tern	<i>Sterna antillarum</i>	E	E		Catron, Socorro
Loggerhead shrike	<i>Lanius ludovicianus</i>			Sensitive	Catron, Socorro
Mexican spotted owl	<i>Strix occidentalis lucida</i>	T	Sensitive		Catron, Socorro
Mountain plover	<i>Charadrius montanus</i>		Sensitive		Catron, Socorro
Neotropic cormorant	<i>Phalacrocorax brasilianus</i>		T		Socorro
Northern goshawk	<i>Accipiter gentilis</i>		Sensitive	Sensitive	Catron, Socorro
Piping plover	<i>Charadrius melodus</i>	T	E		Socorro
Southwestern willow flycatcher	<i>Empidonax traillii extimus</i>	E	E		Catron, Socorro
Varied bunting	<i>Passerina versicolor</i>		T		Catron
Violet-crowned hummingbird	<i>Amazilia violiceps ellioti</i>		T		Socorro
White-faced ibis	<i>Plegadis chihi</i>			Sensitive	Socorro
Whooping crane	<i>Grus americana</i>		E		Socorro
Yellow-billed cuckoo	<i>Coccyzus americanus</i>	C			Catron, Socorro
<b>Fish</b>					
Chihuahua catfish	<i>Ictalurus sp.</i>		Sensitive		Catron
Desert sucker	<i>Catostomus clarki</i>		Sensitive	Sensitive	Catron
Flathead chub	<i>Platygobio gracilis</i>			Sensitive	Socorro
Gila chub	<i>Gila intermedia</i>		E	Sensitive	Catron
Gila trout	<i>Onchorhynchus gilae</i>	E	T		Catron
Loach minnow	<i>Tiaroga cobitis</i>	T	T		Catron
Longfin dace	<i>Agosia chrysogaster</i>			Sensitive	Catron
Rio Grande chub	<i>Gila pandora</i>		Sensitive		Socorro
Rio Grande shiner	<i>Notropis jemezianus</i>		Sensitive	Sensitive	Socorro
Rio Grande silvery minnow	<i>Hybognathus amarus</i>	E	E		Socorro
Roundtail chub	<i>Gila robusta</i>		E	Sensitive	Catron
Sonora sucker	<i>Catostomus insignis</i>		Sensitive	Sensitive	Catron
Speckled dace	<i>Rhinichthys osculus</i>			Sensitive	Catron
Spikedace	<i>Meda fulgida</i>	T	T		Catron
<b>Mammals</b>					
Arizona montane vole	<i>Microtus montanus arizonensis</i>		E		Catron
Allen's big-eared bat	<i>Idionycteris phyllotis</i>		Sensitive	Sensitive	Catron, Socorro

Common Name	Scientific Name	Federal Status	State Status	BLM	County
Black-footed ferret	<i>Mustela nigripes</i>	E	Sensitive		Catron, Socorro
Cave myotis	<i>Myotis velifer</i>		Sensitive	Sensitive	Catron, Socorro
Common hog-nosed skunk	<i>Conepatus leuconotus</i>		Sensitive		Catron, Socorro
Desert Bighorn Sheep	<i>Ovis canadensis mexicana</i>		E		Socorro
Eastern red bat	<i>Lasiurus borealis</i>		Sensitive		Catron
Big free-tailed bat	<i>Nyctinomops macrotis</i>		Sensitive	Sensitive	Catron, Socorro
Fringed myotis	<i>Myotis thysanodes thysanodes</i>		Sensitive	Sensitive	Catron, Socorro
Gunnison's prairie dog	<i>Cynomys gunnisoni</i>		Sensitive		Catron, Socorro
Desert pocket gopher	<i>Geomys bursarius arenarius</i>		Sensitive		
Hooded skunk	<i>Mephitis macroura milleri</i>		Sensitive		Catron
New Mexico jumping mouse	<i>Zapus hudsonius luteus</i>		T	Sensitive	Socorro
Little brown bat	<i>Myotis lucifigus occultus</i>		Sensitive	Sensitive	Catron, Socorro
Long-eared myotis	<i>Myotis evotis evotis</i>		Sensitive	Sensitive	Catron, Socorro
Long-legged myotis	<i>Myotis volans interior</i>		Sensitive	Sensitive	Catron, Socorro
Mexican gray wolf	<i>Canis lupus baileyi</i>	E	E		Catron
Organ Mountains Colorado chipmunk	<i>Tamias quadrivittatus australis</i>		T	Sensitive	Socorro
Oscura Mountain's Colorado chipmunk	<i>Tamias quadrivittatus oscuraensis</i>		T	Sensitive	Socorro
Townsend's big-eared bat	<i>Plecotus townsendii pallescens</i>			Sensitive	Catron, Socorro
Pecos River muskrat	<i>Ondatra zibethicus ripensis</i>		Sensitive	Sensitive	Socorro
Red fox	<i>Vulpes vulpes</i>		Sensitive		Catron, Socorro
Ringtail	<i>Bassariscus astutus</i>		Sensitive		Catron, Socorro
Small-footed myotis	<i>Myotis ciliolabrum melanorhinus</i>		Sensitive	Sensitive	Catron, Socorro
Spotted bat	<i>Euderma maculatum</i>		T	Sensitive	Catron, Socorro
Western red bat	<i>Lasiurus blossevillei</i>		Sensitive		Catron
Western spotted skunk	<i>Spilogale gracilis</i>		Sensitive		Catron, Socorro
White-nosed coati	<i>Nasua narica</i>		Sensitive		Catron
Yuma myotis	<i>Myotis yumanensis</i>		Sensitive	Sensitive	Catron, Socorro
<b>Reptiles</b>					
Narrowhead garter snake	<i>Thamnophis rufipunctatus rufipunctatus</i>		T	Sensitive	Catron
Texas horned lizard	<i>Phrynosoma cornutum</i>			Sensitive	Socorro

Common Name	Scientific Name	Federal Status	State Status	BLM	County
Big Bend slider	<i>Trachemys gaigeae</i>		Sensitive		Socorro
<b>Invertebrates</b>					
Alamosa springsnail	<i>Tryonia alamosae</i>	E	T		Socorro
Chupadera springsnail	<i>Pyrgulopsis chupaderae</i>	C	E		Socorro
Gila springsnail	<i>Pyrgulopsis gilae</i>	C	T		Catron
NM hot springsnail	<i>Pyrgulopsis thermalis</i>	C	T		Catron
Ovate vertigo snail	<i>Vertigo ovata</i>		T		Socorro
Socorro isopod	<i>Thermosphaeroma thermophilus</i>	E	E		Socorro
Socorro mountainsnail	<i>Oreohelix neomexicana</i>		Sensitive		Socorro
Socorro springsnail	<i>Pyrgulopsis neomexicana</i>	E	E		Socorro

SOURCE: Federal and State listed species: New Mexico Department of Game and Fish 2005 (BISON-M database);

NOTES: C = Candidate D = Delisted E = Endangered T = Threatened

## NOXIOUS WEEDS

Table L-2 includes noxious weeds that may occur in the Planning Area. This list is specific to Socorro County; to date, only salt cedar and Russian olive have been found on BLM-managed public land within Catron County.

**Table L-2: Noxious Weeds Potentially Occurring In Planning Area**

**Class “A” Weeds:** Non-native species with a limited distribution in the County. High priority preventing new infestations and eliminating existing infestations.

African Rue*	<i>Peganum harmala</i>
Alfombrilla	<i>Drymaria arenarioides</i>
Black henbane	<i>Hyoscyamus niger</i>
Bull thistle*	<i>Cirsium vulgare</i>
Camelthorn*	<i>Alhagi pseudalhagi</i>
Canada thistle	<i>Cirsium arvense</i>
Cheatgrass	<i>Bromus tectorum L.</i>
Dalmation toadflax	<i>Linaria genisitifolia ssp dalmatica</i>
Diffuse knapweed	<i>Centaurea diffusa</i>
Dyer’s woad	<i>Isatis tinctoria</i>
Eurasian watermilfoil	<i>Myriophyllum spicatum</i>
Giant salvinia	<i>Salvinia molesta</i>
Halogeton	<i>Halogeton glomeratus</i>
Hoary cress*	<i>Cardaria draba</i>
Hydrilla	<i>Hydrilla verticillata</i>
Jointed goatgrass	<i>Aegilops cylindrical</i>
Leafy spurge	<i>Euphorbia esula</i>
Malta starthistle*	<i>Centaurea melitensis</i>
Musk thistle	<i>Carduus nutans</i>
Onionweed	<i>Asphodelus fistulosus</i>
Poison hemlock	<i>Conium maculatum L.</i>
Purple loosestrife	<i>Lythrum salicaria</i>
Purple starthistle	<i>Centaurea calcitrapa</i>
Scotch thistle	<i>Onopordum acanthium</i>
Spotted knapweed	<i>Centaurea maculosa</i>
Teasel	<i>Dipsacus fullonum</i>
Yellow starthistle	<i>Centaurea solstitialis</i>
Yellow toadflax*	<i>Linaria vulgaris</i>



**Class “B: Weeds:** Non-native species that are presently limited to portions of the County. Designated for control in areas where they are not yet widespread.

Parrot feather*	<i>Myriophyllum aquaticum</i>
Perennial pepperweed*	<i>Lepidium latifolium</i>
Russian knapweed*	<i>Acroptilon repens</i>
Siberian Elm*	<i>Ulmus pumila</i>
Tree of Heaven*	<i>Ailanthus altissima</i>

**Class “C” Weeds:** Non-native species widespread in the County and State. Long-term programs are necessary to manage these species.

Field bindweed*	<i>Convolvulus arvensis L.</i>
Russian olive*	<i>Elaeagnus angustifolia L.</i>
Salt cedar*	<i>Tamarix sp.</i>

\* Indicates infestations currently found and mapped in Socorro County.

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## APPENDIX M: PALEONTOLOGICAL RESOURCES MANAGEMENT

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BLM manuals H-8270-1, General Procedural Guidance for Paleontological Resource Management, and H-1601-1, the Land Use Planning Handbook, provide management guidance for paleontological resources within the Planning Area. To protect vertebrate localities and noteworthy invertebrate or plant localities, the BLM has developed a geographic information system (GIS) tool to classify the Planning Area based on the probability to discover important fossils in a particular area. Management prescriptions for specific sensitivity level areas provide procedures for BLM specialists and proponents of actions to follow while conducting site-specific analysis for future proposals within the Planning Area.

The Socorro Field Office manages paleontological resources based on the GIS database maps, other ongoing inventories and databases of fossil resources in New Mexico, and in some instances, on a case-by-case basis. Protection of such resources, where appropriate, will be accomplished to facilitate suitable scientific, educational, and recreational uses of fossils; foster public awareness and appreciation for the area's paleontological heritage; and manage paleontological values to protect and preserve specimens that are present in the Planning Area.

### MANAGEMENT PRESCRIPTIONS BY CLASS

- |                 |   |
|-----------------|---|
| <b>Class 1:</b> | No concern related to paleontological resources unless other site specific surveys note fossil resources in the project area.   |
| <b>Class 2:</b> | No concern related to paleontological resources unless other site-specific surveys note fossil resources in the project area.   |
| <b>Class 3:</b> | Concern related to paleontological resources must be evaluated on a case-by-case project basis. Existing data available through the New Mexico Museum of Natural History and Science and the BLM offices will be used to identify possible resources in the area. GIS tools will be used to screen for appropriate actions. Assessments and additional mitigation could be done on a case-by-case basis.  |
| <b>Class 4:</b> | Concern related to paleontological resources is high and active management prescribed. Proposed ground-disturbing activities require assessment to determine whether significant paleontological resources occur in the area of a proposed action. Notification of requirements will be made to proponents prior to commitment of the resources (for example: leasing, land disposals, surface mines, pipelines, large scale construction projects). Use existing data, GIS screening tools, and site-specific inventories in the assessment. Based on the specific assessment, develop additional management actions, including mitigation for identified paleontological resources. |
| <b>Class 5:</b> | Concern related to Class 5 lands is towards identification and protection of paleontological resources. Identify Class 5 lands through existing and ongoing inventories, known localities, and ongoing refinement of the paleontological GIS layer for the Planning Area.   |

Currently there are no mapped Class 5 fossils; however, there may be local occurrences of Class 4 or 5 fossils determined from database searches of existing and ongoing inventories, and on a case-by-case basis.

## PRESENCE OF RESOURCES

Rock units representing more than 1.5 billion years of geologic time are present in the Socorro Field Office. Many of these units contain paleontological resources and specifically important vertebrate, noteworthy invertebrate, and plant fossils. The potential for a given geologic unit to contain paleontological resources varies by geologic time and the environment represented by specific rock units. As the potential for paleontological resources increases, the need for mitigating surface-disturbing activities also increases.

The BLM has classified geologic formations in the Socorro Field Office according to the Probable Fossil Yield Classification. The planning tool provides for the development of sensitivity levels based on specific geologic units, usually at the formation level and are classified according to the probability of yielding paleontological resources. Probable Fossil Yield Classification is based on probabilities, not certainties or special circumstances. There will be exceptions to each criterion used as the basis for classification and should be handled as unique situations. Mitigation for these situations are handled on a case-by-case basis, as needed. Mitigation requirements may include: (1) additional database searches for site specific paleontological resources, (2) site specific on-the-ground surveys prior to surface disturbance or construction activities, (3) trained field monitors present during construction or ground disturbing activities, (4) recovery, evaluation and curation of the fossil, or (5) avoidance of the site because of the extent and significance of the fossil discovery. The classifications with descriptions follow.

Class	Description	Basis	Comments
1	Igneous and metamorphic (tuffs are excluded from this category) geologic units or units representing heavily disturbed preservational environments that are not likely to contain recognizable fossil remains.	<ul style="list-style-type: none"> <li>Fossils of any kind are not known to occur except in the rarest of circumstances</li> <li>Igneous or metamorphic origin</li> <li>Landslide deposits</li> </ul>	The land manager's concern for paleontological resources on Class 1 acres is negligible. Ground-disturbing activities will not require mitigation except in rare circumstances.
2	Sedimentary geologic units that are not likely to contain vertebrate fossils or scientifically significant non-vertebrate fossils.	<ul style="list-style-type: none"> <li>Vertebrate fossils known to occur very rarely or not at all</li> <li>Age greater than Devonian</li> <li>Age younger than 10,000 years</li> <li>Deep marine origin</li> <li>Aeolian origin</li> <li>Diagenetic alteration</li> </ul>	The land manager's concern for paleontological resources on Class 2 acres is low. Ground-disturbing activities are not likely to require mitigation.
3	Fossiliferous sedimentary geologic units where fossil content varies in significance, abundance, and predictable occurrence. Also sedimentary units of unknown fossil potential.	<ul style="list-style-type: none"> <li>Units with sporadic known occurrences of vertebrate fossils</li> <li>Vertebrate fossils and significant nonvertebrate fossil known to occur inconsistently: predictability known to be low</li> <li>Poorly studied/or poorly documented</li> </ul>	The land manager's concern for paleontological resources on Class 3 acres may extend across the entire range of management. Ground-disturbing activities need to be evaluated on a case-by-case basis for the need to mitigate.

Class	Description	Basis	Comments
4	Geologic units that are highly fossiliferous and have produced significant vertebrate fossils and/or significant invertebrates.	<ul style="list-style-type: none"> <li>• Significant soil/vegetation cover; outcrop not likely to be impacted</li> <li>• Other characteristics that lower the vulnerability of both known and unidentified fossil sites</li> </ul>	The land manager's concern for paleontological resources on Class 4 acres is toward management and away from unregulated access. Proposed ground-disturbing activities will require assessment to determine whether significant paleontological resources occur in the area of a proposed action and whether the action will impact the paleontological resources. Mitigation beyond initial findings will range from no further mitigation necessary to full and continuous monitoring of significant localities during the action.
5	Highly fossiliferous geologic units that regularly and predictably produce vertebrate fossils and/or scientifically significant nonvertebrate fossils and that are at risk of natural degradation and/or human-caused impacts.	<ul style="list-style-type: none"> <li>• Vertebrate fossils and/or scientifically significant nonvertebrate fossils are known and documented to occur consistently, predictably, and/or abundantly</li> <li>• Unit is exposed: little or no soil/vegetative cover</li> <li>• Outcrop areas are extensive, outcrop erodes readily, may form badlands</li> <li>• Easy access to extensive outcrop in remote areas</li> <li>• Other characteristics that increase the sensitivity of both known and unidentified fossil sites</li> </ul>	The land manager's highest concern for paleontological resources should focus on Class 5 acres. Mitigation of ground-disturbing activities is required and may be intense. Areas of special interest and concern should be designated and intensely managed.

SOURCE: Originally developed by the Paleontology Center of Excellence and the Region 2 (U.S. Forest Service) Paleo Initiative, 1996. Some modification by Dale Hansen, Regional Paleontologist, Wyoming, 2002 and Patricia M. Hester, Regional Paleontologist, New Mexico, 2004.

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## APPENDIX N: OLD GROWTH FOREST DEFINITIONS

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### OVERVIEW

The Bureau of Land Management (BLM) National Science and Technology Center staff was asked to develop an information base of old-growth forest descriptions that could contribute to the use of the Healthy Forests Restoration Act (HFRA) authorities, and which might be used in BLM land use plans. Section 102(e)(2) of the HFRA provides that covered projects using HFRA authority are to “fully maintain, or contribute toward the restoration of, the structure and composition of old-growth stands according to the pre-fire suppression of old-growth conditions characteristic of the forest type, taking into account the contribution of the stand to landscape fire adaptation and watershed health, and retaining the large trees contributing to old-growth structure.” The Healthy Forests Initiative and Healthy Forests Restoration Act Interim Field Guide address the old-growth and large tree retention requirements on pages 25 through 29.

The library staff at the National Science and Technology Center conducted an exhaustive literature search for old-growth descriptions. Although scientific literature citations related to old-growth forests are numerous, few publications or published articles contain more than generic definitions of old growth. A review of the definitions suggests that old-growth forest is typically distinguished by the following:

- Large size trees of specific species
- Wide variation in age classes and stocking levels
- Accumulations of large-size dead standing and fallen trees
- Decadence in the form of broken or deformed tops and boles
- Multiple canopy layers
- Canopy interspaces and under story patchiness

In the early 1990s, each region of the U.S. Department of Agriculture (USDA) U.S. Forest Service (Forest Service) developed descriptions of old growth for Society of American Foresters (SAF) forest cover types found in the region. The Forest Service’s national standard for the descriptions contains five structural attributes for consideration in developing minimum criteria for old-growth determination: live trees in the main canopy, variation in tree diameters, dead trees, tree decadence, and number of tree canopies. Descriptions did not have to include all five attributes. The descriptions could include additional region-specific attributes if they were considered important in determining old-growth stands.

Copies of the Forest Service’s descriptions were obtained by the BLM library. They were reviewed for applicability to BLM-managed forests and to the HFRA requirement for “pre-fire suppression old-growth conditions.” A list of forest cover types for BLM-managed lands was obtained from the Forest Service’s Forest Inventory and Analysis (FIA) database with assistance from FIA staff at the Rocky Mountain and Pacific Northwest Research Stations. The FIA and SAF cover types do not correlate one-to-one in all cases; FIA lists more cover types for the western United States than does the SAF. However, in most cases the relationship between the SAF and FIA cover types was fairly straightforward.

Table L-1 (at the end of Appendix L) shows old-growth descriptions available by the Forest Service Region and SAF Forest Cover Type. It identifies their applicability to the BLM by listing the states or portions of a state encompassed within Forest Service regional boundaries. The “Meets HFRA Requirement” column identifies which descriptions likely meet the needs of the BLM with respect to the HFRA requirement for a pre-fire suppression condition.

Most forest types on BLM-managed lands are included in the Forest Service's old-growth descriptions. One should not take the information in the table at total face value; some generalizations had to be made. The Forest Service Region 1 descriptions are not for cover types defined by the SAF; they are region-specific cover types. Those descriptions were correlated to the most similar SAF cover type for use in the table.

Some forest cover types occur on BLM-managed lands that are not present, or are of minor occurrence, on National Forests. Consequently, old-growth descriptions for the several piñon, juniper, and oak cover types found on BLM-managed lands are not in the Forest Service's descriptions. The FIA also includes a mesquite cover type in Arizona; an old-growth description for mesquite is not available. A description for old-growth western juniper, as noted in the references, was found in a separate published work from Forest Service Region 6 (Waichler et al. 2001)

Although old-growth descriptions for most BLM cover types are included in the Forest Service work, there are some limitations with the descriptions themselves. Most of the descriptions do not explicitly describe "pre-settlement" old-growth conditions as per the HFRA requirement. Some descriptions do meet the requirement in that they address conditions (such as stocking, age, etc.) as would be found in a pre-settlement old-growth forest. For example, the Region 3 southwestern Ponderosa Pine description discusses the role of fire in old-growth development. Therefore, one can conclude that the description fits conditions before the influence of settlement and fire suppression.

Each description was judged on its ability to meet the HFRA requirement for a pre-settlement or pre-fire suppression condition. In the case of dry forest types, to be HFRA applicable, a description had to include a discussion of the effects of fire and the fire return interval in creating old-growth stands. At higher elevations with more wet forest types, fire is generally a stand-replacing event which reverts the stand to an earlier seral stage or even causes a forest type conversion. All descriptions for high elevation forest types are believed to meet HFRA requirements.

When in doubt about the role of fire, or where the description is vague about the influence of fire suppression, descriptions are believed to not meet HFRA requirements. The Region 5 and Region 6 descriptions clearly identify conditions existing today that they consider old-growth. Their old-growth descriptions identify "average" characteristics of ecologically old stands, or stands beyond maturity in a timber management context. The descriptions include the effects of modern human influences on the forest. They do not describe a pre-settlement condition.

Because of missing descriptions or descriptions not meeting the HFRA requirement, additional descriptions may need to be developed for some BLM cover types. Also, this section does not intend to imply that the references descriptions should be used as written – adjustments may be required to fit the BLM's needs.

Much of this information cited in this section was developed before the advent of easily transferable documents and consequently is only partially available electronically. In some Forest Service Regions the information is posted on a website. In other instances, the information is available only in hard copy from Regional Offices. Copies of all documents are available from the BLM library but may have to be sent as a hard copy.

## **ATTRIBUTES AND CLASSIFICATION**

Old growth definition structural attributes were developed for the five primary forest cover types in the Southwest (U.S. Department of Agriculture, Forest Service, Southwestern Region 1992). The attributes shown in Table L-2 (at the end of Appendix L) for each of the forest cover types are to be used to

inventory and identify candidate stands for old-growth forest classification. The structural attributes will help identify stands that meet the minimum threshold characteristics to be considered as old-growth forest, excluding any consideration of stand size or location.

## **OLD GROWTH DEFINITIONS**

### ***Piñon-juniper Forest Cover Type***

The piñon-juniper (239) woodland forest cover typed occupies approximately 6.6 million acres. The piñon and juniper species that are in the Southwest are Rocky Mountain piñon, Arizona piñon (single-leaf piñon), border piñon, alligator juniper, redberry juniper, Rocky Mountain juniper, one-seed juniper, Utah juniper, and Pinchot juniper. Piñon-juniper woodlands commonly integrate to such vegetation as chaparral (shrub-dominated communities), grasslands, shrubsteppes (codominant mixtures of grasses and shrubs), evergreen oak woodlands (or encinal), and Ponderosa Pine or other forest types. There are 70 piñon-juniper associations that can be described in the Southwest (Moir and Carleton 1987). The specific species or species mix found at any particular site is largely due to climatic, geographic, and elevation differences. Piñon and juniper trees are found on a wide range of soil conditions.

#### **Description**

Old-growth piñon-juniper will be late successional in development with large, old trees older than 150 years, on low sites, and 200 years, on high sites. There may be a few standing and down dead trees, but dead branches/limbs and even parts of the stems of older piñon and juniper trees may help make up the dead material deficit. The piñon-juniper stands usually develop under all-aged conditions (early and mid successional stages) until the site becomes fully occupied with older trees (late successional stage). As indicated by the large number of associations, old-growth piñon-juniper is variable in composition. The typical woodland piñon-juniper old-growth is fairly open with the presence of an understory of grass, forbs, and often shrubs. Since existing piñon-juniper stands are developing with reduced herbaceous understory competition and without low-intensity ground fires, as occurred prior to the late 1800s, they typically have a larger number of stems and a denser canopy structure. The less shade tolerant herbaceous understory vegetation is reduced significantly when an overstory reaches around 30 percent.

#### **Age Longevity**

Swetnam and Brown (1992) recently reported that the mean age for piñon pine was 278 years, as represented from 43 sites and 719 old trees in Arizona and New Mexico. The oldest living piñon tree, at the time of sampling, was 666 years (Swetnam and Brown 1992).

### ***Ponderosa Pine Forest Cover Type***

The Ponderosa Pine (237) forest cover type in the Southwestern Region covers approximately 3.9 million acres outside of the wilderness areas and an undetermined amount within the reserved areas.

The dominant tree species in the Ponderosa Pine forest cover type is Ponderosa Pine. Minor tree species of piñon pine and juniper occur with Ponderosa Pine at lower elevations adjacent to the piñon-juniper forest cover type, although, Rocky Mountain and alligator juniper can occur any place within the Ponderosa Pine type. At higher elevations near the mixed-species group, Southwestern white pine and Gambel oak can be found in abundance, and frequently small amounts of Douglas-fir, white fir, and aspen are present.

Ponderosa Pine has been referred to as blackjack and yellow pine in the past. The term blackjack indicated a younger Ponderosa Pine with dark gray to black bark color. The blackjack's bark is deeply furrowed with narrow ridges between the fissures. In contrast, the term yellow pine was used to indicate an older tree. The older yellow pine's bark is reddish brown to yellow, carrying the color well into the top of the tree; the plates are usually very wide, long, and smooth. The bark color transition begins sometime

between 120 to 150 years of age, depending upon the geographic location. The older trees also have large branches in the upper portion of the tree that tend to be perpendicular to the stem. In addition, the tree top is flatter than younger more vigorous trees.

Fire was key in shaping Southwestern Ponderosa Pine forests prior to pre-European settlement. Low-intensity ground fires typically burned through Ponderosa Pine forests at 3- to 15-year intervals, keeping forests open in appearance, and removing competing understory vegetation and down material. Frequent burning resulted in irregularly-shaped large patches with even-aged groups of trees varying in size, age, and density over the landscape.

Fire suppression, timber harvesting, livestock grazing, mining, and recreational uses have altered the pre-settlement conditions. Now the Ponderosa Pine forests are generally denser, with many small trees, have fewer large trees, have a greater accumulation of down material, and have sparse herbaceous understory.

### **Description**

Old-growth Ponderosa Pine will be late successional in development with large trees older than 180 years of age; mature tree characteristics will be as described for yellow pine. The size and number of large trees will represent the productivity of the site, with fewer and smaller trees on the lower sites. Minimums are at least one large dead standing tree and two large-sized dead down trees per acre. More snags and down logs will not distract from the late successional old-growth characteristics. The structure may be either single-storied or multi-storied. Density will also vary with site productivity; with less basal area and canopy cover on the less productive land.

### **Age Longevity**

Pearson (1950) states the oldest Ponderosa Pine recorded in the Southwest was 650 years. Trees over 400 years are found occasionally, but mature trees in general are not much over 300 years old and most are less than 200 years old (Pearson 1950).

White (1985) found that trees in the Gus Pearson Natural Area ranged in age up to 405 years, but the majority of the trees were less than 200 years; peak ages were between 145 and 165 years. Covington's and Moore's (1991) data appear to show a rapid decline in the number of large Ponderosa Pine trees at about 200 years of age when a dense understory exists. Daniel (1980) states that Ponderosa Pine remains physiologically young up to 200 years of age in its response to thinning.

Swetnam and Brown (1992) recently reported that the mean age for Ponderosa Pine was 279 years. Their data set represented 62 sites and 915 old trees in Arizona and New Mexico. The oldest living Ponderosa Pine tree, at the time of survey, was 742 years (Swetnam and Brown 1992).

### **Aspen Forest Cover Type**

The aspen forest cover type (217) seldom, if ever, occurs as a pure stand of quaking aspen or as the climax species in the Southwest; it always appears in association with one or more other tree species as the seral species. Species that are associated with it are Ponderosa Pine, Douglas-fir, Engelmann spruce, limber pine, subalpine fir, white fir, and Southwestern white pine.

Aspen is one of the first species that regenerates after a wildfire or similar disturbance, if the clone is present. Aspen will quickly sucker from an existing live root system following a disturbance that kills the upper portion of the aspen tree (aspen does not normally regenerate from seed in the Southwest). Rapid growth occurs after suckering and during the early stand development years. With increasing stand age, conifer seedlings, from surrounding conifer seed trees, eventually become established and grow in the shade of the aspen, aspen acting like a nurse crop to the conifers. Since aspen is relatively short lived and



conifers longer lived, the conifers eventually outgrow aspen, replacing the aspen, first as a mixed type and finally as a conifer type.

### **Description**

Aspen old-growth is characterized as having a single canopy overstory layer of old aspen trees at least 100 years of age. There would be an understory of conifers; however, there could be instances where the understory conifers would be removed by cutting to keep an open appearance for a specific value. There would probably be few dead standing and down trees until the old aspen trees begin to degenerate from pathogenic causes, then down dead material would begin to accumulate. As the overstory aspen trees continue to die, the understory conifers would begin to dominate the stand as an early or mid successional stage, depending upon their size and development, and the old-growth stand will no longer exist. Aspen old-growth, at the best, is short term in duration.

### **Age Longevity**

Aspen is a small- to medium-sized, fast-growing and short-lived tree. Aspen is susceptible to a large number of diseases and is host to a wide variety of insects. The insects, many of them defoliators, tend to reduce the tree's vigor, but are not the major cause of tree death. Diseases are the primary cause for the short life of aspen. A few vigorous trees attain a maximum age of about 200 years; the oldest recorded is 226. The pathological age of aspen in the West ranges from 80 to 120 years (Hunter 1989; Perala 1990). No habitat type list was developed for aspen. Aspen does not occur as a habitat type in the Southwest. Aspen can occur as a forest cover type in any plant association where aspen is present; however, aspen would be considered a seral species (as early successional species).

### ***Mixed-species Group Forest Cover Types***

There is several forest cover types included in the mixed-species group. The mixed-species group includes the Douglas-fir (210), white fir (211), blue spruce (216), and limber pine (219) forest cover types. Most often the mixed-species stands have a rich diversity of vegetation, including three or four different tree species, sometimes more (Krauch 1956).

The major tree species found in this group are Douglas-fir and white fir. Often included in minor amounts are tree species such as subalpine fir, corkbark fir, Engelmann spruce, blue spruce, Southwestern white pine, Ponderosa Pine, aspen, and Gambel oak.

The mixed-species group is a productive forest component. This group occurs on the landscape at a middle elevation between the lower elevation Ponderosa Pine forest cover type and the higher elevation Engelmann spruce-subalpine fir forest cover type. The mean annual precipitation in the Douglas-fir zone averages a little more than 26 inches and the growing season is of adequate length for good growth response (Krauch 1956).

The various tree species all have different shade tolerance levels, regeneration requirements, and growth characteristics. Therefore, for trees, the tolerance of most practical importance is their ability to establish and grow satisfactorily in the shade of, and in competition with, other larger trees. Shade tolerant tree species express their presence and increase in number as a mixed-species stand grows older (mid and late succession stages) and/or becomes denser. There is a gradual change in species composition to the more shade tolerant species without natural or man-caused disturbance.

The tolerance of the associated species has been given as subalpine fir  $\geq$  Englemann spruce  $\geq$  corkbark fir  $\geq$  white fir  $\geq$  Douglas-fir  $\geq$  blue spruce  $>$  Southwestern white pine  $\geq$  limber pine  $>$  Ponderosa Pine  $>$  aspen  $\geq$  Gambel oak (Daniel 1980). Limber pine and Gambel oak were added to Daniel's reference as observed in the Southwest.

Before European settlement of the Southwest, low-intensity ground fires in mixed-species forests occurred at lesser intervals than in Ponderosa Pine. Ground fires burned more frequent on dry, low elevation sites and less frequent on moist, high elevation sites. The fires keep the forest open, allowing less shade tolerant tree species such as Ponderosa Pine, aspen, and Gambel oak to establish and grow. Since fire suppression management was started in the early 1900s, mixed-species forest structure and composition has changed. The structural change has been to increased crown cover and basal area densities, more trees, especially smaller trees, forming a multi-storied condition. The compositional change has been to the more shade tolerant species such as white fir and Douglas-fir. Furthermore, the lack of fire and change in conditions have increased the susceptibility of the forest to insect and disease agents.

### **Description**

Old-growth mixed species group forest cover types will be late successional in development with large trees older than 150 years. The size and number of large trees will represent the productivity of the site, with fewer and smaller trees on the lower sites. The forest should have a diverse composition of tree species; aspen may not be present in this stage. At least 3.5 large, dead-standing trees and four large, dead down pieces per acre of any species will be present. The forest structure can be either single storied or multi-storied. Basal area and canopy cover densities will vary depending upon the productive capability of the land.

### **Age Longevity**

**Douglas-fir** – Coastal Douglas-fir is considered very long lived. Ages in excess of 500 years are not uncommon and some have exceeded 1,000 years; however, interior Douglas-fir rarely lives more than 400 years (Hermann and Lavender 1990). Hunter (1989) lists the maximum longevity age for Douglas-fir to be 1,000 years and the pathological longevity age of 150 years. Lynch (1990) reported sampling 13 live Douglas-fir trees on the Carson National Forest that were greater than 600 years of age; five of the trees were 700 to 779 years old.

Swetnam and Brown (1992) recently reported the mean age for Douglas-fir to be 278 years, as represented on 38 sites—526 old trees in Arizona and New Mexico. The oldest living Douglas-fir tree, at the time of the sampling, was 930 years.

**White Fir** – Coastal white fir does not often exceed 350 years, but 500-year-old trees have been reported; however, the maximum age in the interior may be close to 300 years (Markstrom and McElderry 1984). Hunter (1989) lists the maximum longevity age for white fir to be 360 years and the pathological longevity age of 150 years. The oldest known living white fir tree in Arizona and New Mexico, at the time of sampling, was 333 years (Swetnam and Brown 1992).

**Subalpine Fir** – The subalpine fir/corkbark fir trees often live for more than 250 years (Markstrom and McElderry 1984). Hunter (1989) lists the maximum longevity age for subalpine fir to be 250 years and the pathological longevity age of 130 years. Alexander (1987) recognized that the species suffers severely from heart rot; many trees either die or are complete culls at an early age.

**Engelmann Spruce** – Engelmann spruce matures at about 300 years, often dominant spruce are 250 to 450 years old, and trees 500 to 600 years are not uncommon (Alexander and Sheppard 1990).

**Blue Spruce** – Blue spruce is apparently a long-lived tree, often reaching up to 600 years or more in age (Fechner 1990).

**Southwestern White Pine** – Southwestern white pine has very little information concerning longevity; however, it is observed that Southwestern white pine could have the same longevity attributes as Eastern white pine. The maximum longevity is 450 years and the pathological longevity age is 160 to 170 years

for Eastern white pine (Hunter 1989). The age of decline for Western white pine is 300 to 400 years and the oldest age 500 years (Graham 1990). The oldest known living Southwestern white pine tree in Arizona and New Mexico, at the time of the sampling, was 538 years (Swetnam and Brown 1992).

***Limber Pine*** – Preston (1961) indicates that limber pine reaches maturity in 200 to 300 years. One tree in southern California was found to be well over 1,000 years; another in central Idaho was 1,650 years old (Steele 1990). Lynch (1990) reported finding limber pine trees on the Carson National Forest that were hollow; the outer stem measured 1,500 to 1,700 years old. Lynch is confident that trees measuring 2,000 years old are located in this area. The oldest known living limber pine found in Arizona and New Mexico reported by Swetnam and Brown (1992), at the time of sampling, was 1,670 years.

***Gambel Oak*** – Gambel Oak is considered a short-lived tree. A study in the Navajo National Monument, Arizona, indicated that oak stems rarely live longer than 80 years; 103 was the oldest stem found. In addition, 90 percent or more of the stems encountered in long-established clones were less than 10 years old (Brotherson et al. 1983). The oldest known living Gambel oak tree in Arizona and New Mexico, at the time of sampling, was 401 years (Swetnam and Brown 1992).

### ***Engelmann Spruce-Subalpine Fir Forest Cover Type***

The dominant tree species in the spruce-fir (206) forest cover type are Engelmann spruce and subalpine fir. Minor tree species of Douglas-fir, blue spruce, white fir, limber pine, aspen, and occasionally Ponderosa Pine associate at the lower elevations, and corkbark fir and bristlecone pine at the higher elevations. The bristlecone pine (209) forest cover type is included with the spruce-fir description. Engelmann spruce and subalpine fir occur as codominants or in nearly pure stands of one or the other species. Engelmann spruce generally extends above subalpine fir and corkbark fir, forming nearly pure stands at timberline.

Spruce-fir forests have lower fire frequencies than the Ponderosa Pine and mixed-species. The frequencies are from 63 to 400 years and are usually stand replacement events.

### **Description**

Old-growth spruce-fir will be late successional in development with large trees older than 140 years where Engelmann spruce is less than 50 percent composition and 170 years old where Engelmann spruce is 50 or more percent composition of the stand. The size and number of large trees will vary with site productivity, with fewer and smaller trees on the lower sites. There is usually over-abundance of standing dead and down trees. The structure will more than likely be two or more storied with natural regeneration appearing in gaps or small openings caused by the death of one or more of the large trees. Density will usually be high; but will be slightly less on the less productive sites.

Bristlecone pine is much less tolerant to shade than Engelmann spruce and subalpine fir and therefore would almost always be the pioneer species for spruce-fir stands. However, occasionally old-growth bristlecone pine may occur in small-sized patches on very harsh, exposed sites. Where it does occur, it would have small tree-sized characteristics.

### **Age Longevity**

The pathological and maximum longevity ages for all species in the spruce-fir have been discussed in the mixed-species forest cover type except for bristlecone pine. The bristlecone pine grows very slow, reaches maturity in 200 to 250 years, obtaining ages of over 2,000 years, possibly the oldest living organism (Preston 1961).

Swetnam and Brown (1992) recently reported that the oldest known living bristlecone pine and Engelmann spruce trees in Arizona and New Mexico, at the time of sampling, was 1,438 and 295 years, respectively.

**Table N-1: Old-Growth Descriptions**

References	States	SAF Cover Types found on BLM with Old-growth Descriptions Available	Meets HFRA Requirement	SAF Cover Types Found on BLM without Old-Growth Descriptions
<b>Forest Service Region 1</b>				
Green et al. 1992	Northern Idaho, Montana, North Dakota	205 Mountain hemlock 206 Engelmann spruce-subalpine fir 208 Whitebark pine 210 Interior douglas fir 212 Western larch 213 Grand fir 215 Western white pine 218 Lodgepole pine 219 Limber pine 224 Western hemlock 228 Western red cedar 237 Interior Ponderosa Pine	Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes	217 Aspen* 220 Rocky Mountain juniper
<b>Forest Service Region 2</b>				
Mehl 1992	Colorado, Wyoming, South Dakota	206 Engelmann spruce-Subalpine Fir 210 Interior douglas fir 217 Aspen 218 Lodgepole pine 237 Interior Ponderosa Pine (Front Range) 237 Interior Ponderosa Pine (Black Hills) 237 Interior Ponderosa Pine (Southwest) 239 Piñon-juniper	Yes Yes Yes Yes Yes Yes Yes Yes	208 Whitebark pine* 219 Limber pine* 220 Rocky Mountain juniper
<b>Forest Service Region 3</b>				
USDA Forest Service, Southwestern Region 1992	Arizona, New Mexico	206 Engelmann spruce-subalpine fir 217 Aspen 237 Interior Ponderosa Pine 239 Piñon-juniper 210 Interior douglas fir 211 White fir 216 Blue spruce 219 Limber pine	Yes Yes Yes Yes Yes Yes Yes Yes	220 Rocky Mountain juniper
<b>Forest Service Region 4</b>				
Hamilton 1993	Southern Idaho, Nevada, Utah, Western Wyoming	206 Engelmann spruce-subalpine fir 208 Whitebark pine 209 Bristlecone pine 210 Interior douglas fir 216 Blue spruce 217 Aspen 218 Lodgepole pine 219 Limber pine 237 Interior Ponderosa Pine (Northern Plateau Race) 237 Interior Ponderosa Pine (Rocky Mountain Race) 239 Piñon-juniper	Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes	220 Rocky Mountain juniper 223 Jeffery pine* 235 Cottonwood-willow

**Table N-1: Old-Growth Descriptions**

References	States	SAF Cover Types found on BLM with Old-growth Descriptions Available	Meets HFRA Requirement	SAF Cover Types Found on BLM without Old-Growth Descriptions
<b>Forest Service Region 5</b>				
USDA Forest Service, Pacific Southwest Region 1992	California	207 Red Fir 211 White Fir 218 Lodgepole pine 229 Pacific douglas fir 232 Coast redwood 234 Douglas fir/tanoak/madrone 237 Interior Ponderosa Pine 243 Mixed conifer 245 Pacific Ponderosa Pine 247 Jeffery pine 256 California mixed subalpine forests	Yes No Yes No No No No No No No No	239 Piñon-juniper 233 Oregon white oak 238 Western juniper 246 California black oak 249 Canyon live Oak
<b>Forest Service Region 6</b>				
USDA Forest Service, Pacific Northwest Region 1993	Oregon, Washington	206 Engelmann spruce-subalpine fir 210 Interior douglas-fir 211 White fir 213 Grand fir 218 Lodgepole pine 224 Western hemlock 226 Coastal true fir-hemlock 229 Pacific douglas-fir 231 Port-orford-cedar 232 Redwood 234 Douglas fir-tanoak-pacific madrone 237 Interior Ponderosa Pine	Yes Yes No No Yes Yes No Yes No No No Yes	207 Red Fir 238 Western juniper, (see Waichler et al. 2001)
<b>Forest Service Region 10</b>				
Capp et al. 1992	Alaska	201 White spruce 204 Black spruce 205 Mountain hemlock 217 Aspen 223 Sitka spruce 224 Western hemlock	Yes Yes Yes Yes Yes Yes	

\*A definition is available from one of the other regions.

**Table N-2: Old-Growth Attributes By Forest Cover Type**

	Piñon-Juniper		Interior Ponderosa Pine		Aspen	Mixed Species Group		Engelmann Spruce-Subalpine Fir	
Forest Cover Type, SAF Code	239		237		217	210, 211, 216, 219		206, 209	
Site Capability Potential Break Between Low and High Site			55 Minor			50 Douglas-Fir Edminster and Jump		50 Engelmann Spruce Alexander	
Live trees in main canopy	Low	High	Low	High	All	Low	High	Low	High
Trees/acre	12	30	20	20	20	12	16	20	30
DBH/DRC	9"	12"	14v	18"	14"	18"	20"	10"	14"
Age (Years)	150	200	180	180	100	150	150	140 <sup>3</sup>	170 <sup>4</sup>
Variations in tree diameters (y/n)	No		No		No	No		No	
Dead trees standing	Low	High	Low	High	All	Low	High	Low	High
Trees/acre	0.5 <sup>1</sup>	1	1	1	No	2.5	2.5	3	4
Size DBH/DRC	9"	10"	14"	14"	10"	14"	16"	12"	16"
Height (feet)	8'	10'	15'	25'	No	20'	25'	20'	30'
Dead trees down	Low	High	Low	High	All	Low	High	Low	High
Pieces/acre	2	2 <sup>2</sup>	2	2	No	4	4	5	5
Size (diam.)	9"	10"	12"	12"	No	12"	12"	12"	12"
Length (feet)	8'	10'	15'	15'	No	16'	16'	16'	16'
Tree decadence	Low	High	Low	High	All	Low	High	Low	High
Trees/acre	No		No		No	No		No	
Number of tree canopies	SS/MS		SS/MS		SS	SS/MS		SS/MS	
Total BA, Square feet per acre	6	24	70	90	No	80	100	120	140
Total canopy cover (%)	20	35	40	50	50	50	60	60	70

NOTES: <sup>1</sup> Dead limbs help make up dead material deficit.

<sup>2</sup> Unless removed for firewood or fire-burning activities.

<sup>3</sup> In mixed corkbark fir and Engelmann spruce stands where Engelmann spruce is less than 50 percent compositions in the stand.

<sup>4</sup> In mixed corkbark fir and Engelmann spruce stands where Engelmann spruce is 50 or more percent composition in the stand.

No: not determined SS: single storied MS: multi storied L: Live (trees in main canopy)

DBH = Diameter at Breast Height. This measurement of tree diameter is taken at 4.5 feet above ground level.

DRC = Diameter at Root Cellar.

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